

---

**INPUT**

---

*VENDOR ANALYSIS*  
*PROGRAM*

---

---



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

February 1996

## Comshare, Inc.

**Chairman:** Richard L. Crandall  
**President & CEO:** T. Wallace Wrathall  
555 Briarwood Circle  
Ann Arbor, MI 48108  
**Phone:** (313) 994-4800  
**Fax:** (313) 994-5895  
**Internet:** [Http://www.comshare.com](http://www.comshare.com)

Status:	Public
Employees:	694 (9/95)
Revenue:	\$108,358,000
Fiscal Year End:	6/30/95

### Key Points

- Comshare provides a range of decision support software products for client/server environments.
- During the past two years, the company has made a strong push to deliver client/server releases of its mainframe products. As a result, software license revenue increased more than 92% during fiscal 1995 to \$49.3 million.

### Company Description

Comshare develops, markets and supports client/server decision support applications software designed to improve business analysis, planning, reporting and decision making.

- Comshare's software products enable the enterprise-wide integration and transformation of data into business-critical information by leveraging on-line analytical processing (OLAP) technologies.
- The company's software applications are targeted to three decision support markets—executive information systems (EIS), financial reporting and retail decision support.

Founded in 1966, Comshare was one of the earliest companies to offer generalized commercial timesharing (processing) services.

- More recently, it is one of the first companies to successfully launch an OLAP product.
- During the 1980s, the company reoriented its business strategy to offer its proprietary software for use on in-house mainframes, microcomputers, and through its traditional processing services.
- Recently, Comshare's products have been adapted to a client/server environment and have been modified to run on the Windows operating environment.

On November 22, 1995, Comshare made a public stock offering of approximately 2.17 million shares of common stock, of which 1.05 million shares were sold by shareholders. A portion of the \$22 million in proceeds will be used to repay \$4.7 million in debt.

### Organization and Structure

Comshare is headquartered in Ann Arbor (MI) and markets its software products through direct sales operations in North America, Canada, France, Germany, the U.K. and Australia.

Independent agents and licensees are located in 34 additional countries around the world.

### Company Strategy

Comshare's objective is to be the leading provider of client/server decision support applications software in its target markets. Key elements of Comshare's strategy include:

- Providing customizable, packaged applications for specific industry or

functional needs, in order to differentiate itself from competitors.

- Continuing to develop new application-specific, client/server software technology, internally. Specifically, Comshare plans to offer its new Detect and Alert™ technology for use with all of its major products.
- Increasing the rate at which it licenses software tools from third parties for incorporation into its products, in order to reduce product development risk and time-to-market for new products and product enhancements.
- Leveraging its current customer base to generate additional sales opportunities. Comshare also intends to expand its sales force to improve customer service.
- Expanding its international customer base by leveraging its established direct and indirect sales distribution networks, through programs developed to increase market penetration in key markets, on a worldwide basis.
- Providing superior implementation, consulting, training and support, through its industry and application expertise.

### Financials

Comshare's total revenue for fiscal 1995 was \$108.4 million, a 12.1% increase over fiscal 1994 revenue of \$96.6 million. Net income for fiscal 1995 reached \$5.3 million compared to \$0.2 million the previous year.

A five-year financial summary appears on the following page.

**Comshare, Inc.**  
**Five-Year Financial Summary**  
**(\$ Millions, except per share data)**

Item	Fiscal Year				
	6/95	6/94	6/93	6/92	6/91
Revenue	\$108.4	\$96.6	\$105.2	\$119.2	\$124.7
• Percent change from previous year	12%	(8%)	(12%)	4%	20%
Income (loss) before taxes	\$2.3	\$1.1	\$(1.1)	\$(13.0)	\$10.1
• Percent change from previous year	109%	(a)	(a)	(b)	(6%)
		200%	92%	(229%)	
Net income (loss)	\$5.3	\$0.2	\$(1.8)	\$(11.1)	\$6.3
• Percent change from previous year	*	111%	84%	(276%)	(9%)
Earnings (loss) per share	\$0.63	\$0.03	\$(0.22)	\$(2.10)	\$1.16
• Percent change from previous year	*	114%	89%	(281%)	7%

\* Percent change exceeds 1,000%.

(a) Includes restructuring charges of \$2.3 million in fiscal 1994 and \$1.5 million in fiscal 1993 related to staff reductions.

(b) Includes unusual charges of \$15.3 million related to reducing the carrying value of certain software to its net realizable value.

Revenue for software licenses increased \$11.4 million (30.2%) over fiscal 1994. Comshare's 12.1% increase in fiscal 1995 revenue growth was attributed primarily to the increase in client/server software license revenue.

- Software licenses revenue from client/server products increased \$17.8 million (60.8%) in fiscal 1995, representing 92.3% of total software license revenues.
- Revenue from software licenses derived from mainframe products declined \$5.6 million (59.6%) in fiscal 1995.

Software maintenance revenues decreased approximately \$5 million (12%), partially offsetting increases in software license revenues. This decline was due primarily to the 25.2% decrease in revenues derived from

mainframe products. Client/server software maintenance revenue in fiscal 1995 increased \$1.1 million, an increase of 6.3%.

Implementation, consulting and other service revenue increased \$5.3 million (30.9%) to 20.7% of total revenue in fiscal 1995. The increase in client/server software license during the fiscal period in all three decision support market areas created increased demand for implementation, consulting and other services.

Internal research and development expenditures were approximately \$16.2 million (6.7% of revenue) in 1995, compared to \$19.3 million (5% of revenue) in 1994.

*Revenue Analysis by Product / Service*

Approximately 45% of Comshare's fiscal 1995 revenue was derived from software licenses, of which approximately 92% came from client/server products and 8% from the company's mainframe products. About 34% of revenue was derived from software maintenance revenue and the remaining 21% from implementation, consulting and other services.

The increase in client/server software license during the fiscal period in all three decision support market areas created increased demand for implementation, consulting and other services.

- Overall software license revenue grew 26% in the OLAP/EIS market.
- In the financial reporting applications market, software license revenue growth of 40% year-to-year, was attributed to the second major Windows release of Commander™ FDC and Commander Budget.
- Retail decision support software license revenues rose 41% in fiscal 1995 compared to 1994.

A three-year summary of source of revenue by product/service is shown below.

**Comshare, Inc.**  
**Three-Year Source of Revenue Summary**  
 (\$ Millions)

Product/Service	Fiscal Year					
	6/95		6/94		6/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software licenses	\$49.3	45%	\$37.9	39%	\$40.4	38%
Maintenance	36.7	34%	41.6	43%	43.1	41%
Implementation services	22.4	21%	17.1	18%	21.7	21%
Total	\$108.4	100%	\$96.6	100%	\$105.2	100%

*Interim Results*

Revenue for the three months ending September 30, 1995 reached \$28.7 million, a 19% increase over \$24.2 million for the same period in 1994. Net income for the period rose 18%, to \$1.5 million from \$.08 million in 1994.

Total software license revenue rose 40% to \$13.9 million due primarily to increased revenue from client/server decision support applications.

- Total software license revenue growth was principally due to a 45% increase in EIS software license revenue.
- Financial reporting software applications revenue increased 49%, and software license revenue in the retail decision support market increased 16% for the three months ending September 30, 1995.

Total software maintenance revenue for the quarter rose to \$9 million, up from \$8.9 million for the same period in 1994.

- Client/server software maintenance revenue increased 28% to \$5.7 million, up from \$4.5 million for the same period in 1994.
- Mainframe software maintenance revenue fell 25% to \$3.3 million, offsetting the growth in client/server maintenance revenue.

Implementation, consulting and other service revenue reached \$5.7 million, an increase of 10% over \$5.2 million for the same period in 1994.

## Market Financials

Comshare derives its revenue from clients in a range of industries, including communications, financial services, health care, retail and transportation, as well as government and other public sector organizations.

## Geographic Markets

Approximately 43% of Comshare's fiscal 1995 revenue was derived from North America and the remaining 57% came from international sources. A three-year summary of geographic sources of revenue follows:

**Comshare, Inc.**  
**Three-Year Geographic Source of Revenue Summary**  
**(\$ Millions)**

Geographic Market	Fiscal Year					
	6/95		6/94		6/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
North America	\$48.5	43%	\$43.2	45%	\$45.6	43%
International	59.9	55%	53.4	55%	59.6	57%
Total	\$108.4	100%	\$96.6	100%	\$105.2	100%

## Employees

As of September 30, 1995, Comshare had 694 full-time employees worldwide, segmented as follows:

Sales and marketing .....	259
Consulting and implementation services.....	157
Research and product development.....	141
Customer support and administration .....	<u>137</u>
	<b>694</b>

## Key Products and Services

### Software Products

Comshare supplies its software applications to three decision support markets—EIS/DDIS, financial reporting and retail decision support.

### Executive Information Systems (EIS) —

Commander Series is a family of client/server products that assist managers in the automation of information access, integration, analysis, reporting, and delivery.

- Commander Decision, released in December 1995, is a planning, analysis

and reporting system that will replace Commander OLAP as the company's main product.

- Commander Decision provides charts, an integrated mapping system, color-coded exception reporting, ad hoc queries and calculations and Comshare's Detect and Alert system which enables automatic monitoring of performance controls.
- Commander Decision has a new end-user front-end, which combines Execu-View, Comshare's information visualizer, and Briefing Book, a series of preformatted reports.
- Commander Decision accommodates Windows '95, Windows NT 3.5 and Windows 3.1. Server platforms include Microsoft's Windows NT (Intel), IBM's OS/2, or HP's HP/UX operating system.
- Commander OLAP, released in 1991, is a suite of software providing customizable enterprise-wide business planning, analysis, reporting and decision-making capabilities. It consists of data extraction tools, a multidimensional database, enhanced server technology, agent technology and a variety of GUIs.
- Comshare sells and supports System W® and IFPS decision support software for use on mainframe computers. Customers use these software for applications similar to those performed through Commander OLAP.

BOOST, introduced in late 1995, is targeted at the very large consumer packaged goods industry for planning, analysis and forecasting applications.

*Financial Reporting Applications*—The Commander product line offers decision

support consolidation, financial reporting and budgeting applications. The products consist of data extraction tools, a central database, and a choice of GUIs.

- Commander FDC collects and consolidates financial data from general ledgers within a multi-division or multi-location company and produces consolidated financial reports for management and statutory reporting. It also performs currency translation.
- Commander Budget is a distributed budgeting system which allows managers throughout an organization to prepare budgets using Microsoft Excel or Lotus 1-2-3 front-end, and enables central consolidation of the budgets.

#### *Retail Decision Support*

*Applications*—ARTHUR™ product line, introduced in 1987, is a suite of retail decision support software that enables retailers to plan merchandise purchases to control inventory levels, tailor their purchases to consumer preferences and market trends and track and analyze actual sales performance.

- ARTHUR Planning can be used by small retailers on a desktop platform or by larger retailers using ARTHUR Plan Monitor as the data repository.
- ARTHUR Plan Monitor is server-based, with Arbor's Essbase as its core multidimensional database software. It may also be used as a sales tracking database.
- ARTHUR Performance Tracking has an architecture similar to Commander OLAP, and its multidimensional database is mainframe-based.

- ARTHURView is Comshare's Execu-View information visualizer product sold under the ARTHUR brand name.
- ARTHUR Allocation, under development, is a merchandise management application.

Software license fees vary depending on the product, platform, and number of users supported. Add-on features and products are available for additional fees. For fiscal 1995, the software license fee for a typical EIS, financial reporting and retail decision support application (including add-ons, but excluding maintenance) averaged approximately \$110,000, \$82,000, and \$115,000 respectively.

#### *Services*

To complement its products, Comshare offers implementation, consulting and training.

- Implementation and consulting services include application design and modification, installation assistance, implementation and troubleshooting support.
- Comshare offers training at customer sites, at local sales offices and at its central training centers in Ann Arbor (MI) and London (England).

The company also offers pre-sales and post-sales technical support and maintenance. Customer support is provided through its team of decision support specialists and worldwide agent/distributor network.

#### **Clients**

Comshare currently provides applications software maintenance at more than 3,000 corporate and public sector customer sites in 40 countries. Comshare's customers include many Fortune 1000 and Financial Times 1000 industrial companies, as well as large and mid-sized companies in the communications, financial services, health care, retail and transportation industries, and many governmental and other public sector organizations.

A representative sample of customers who purchased \$50,000 or more in software licenses from Comshare in 1995 is shown in the exhibit on the following page.

#### **Marketing and Sales**

Comshare products and services are sold on a worldwide basis by a direct sales force and by an extensive worldwide agent/distributor network. Software products and services are marketed in the U. S., Canada, the U.K., France, Germany, and Australia through a direct sales organization. The direct sales operations are organized geographically, and by industry or functional decision support expertise.

Comshare has an agent/distributor network covering 34 countries not directly served by the company. Approximately 17% of Comshare's total revenue in fiscal 1995 was derived from its agent/distributor network that markets, implements and supports Comshare products.

# Exhibit

## Comshare Partial Client List

Product Line/Client List	Product Line/Client List	Product Line/Client List
Executive Information Systems	Financial Reporting Applications	Retail Decision Support
Allied Signal Inc. AMP Incorporated AT&T Corporation The Bear Stearns Companies Inc. British Gas PLC Bristol Myers Squibb Co. Canadian Coast Guard Chase Manhattan Corporation CIBA Vision Corp., a subsidiary of CIBA-Geigy Ltd. Columbia Gas System Service Corp. Internal Revenue Service Johnson & Johnson, Inc. Lenox, Inc. Liz Claiborne, Inc. Old Kent Financial Corp. The Reader's Digest Association, Inc. Roadway Package System, Inc. Rohm & Haas Co. Shell Oil Company Textron Inc. TRW Inc. U.S. Bancorp Wells Fargo Bank, N.A.	Alberto-Culver USA, Inc. Barclays Bank PLC Cargill, Inc. Franklin Resources, Inc. Hartmarx Corporation Insignia Financial Group, Inc. Interprovincial Pipe Line Inc. Kerr McGee Chemical Co. Lee Company Nestle France S.A. Paging Network, Inc. Pegasus Gold Inc. Progress Software Corporation Bank of America National Trust & Savings Assn. Skadden, Arps, Slate, Meagher & Flom Starbucks Corporation Time Warner, Inc. Toshiba America, Inc. Toyota Motor Corporation Tropicana Products, Inc. Watts Regulator Co.	Boscov's Department Stores Inc. C&J Clark America Inc. Coach Leatherware Co., Inc. CompUSA Inc. Country Road Clothing Pty. Ltd. Dylex Limited Foot Action USA Gantos, Inc. ISSC Corporation (Eckerd Drugs) J.Crew Group, Inc. Jockey International, Inc. Kaufhalle AG Neiman Marcus Group NIKE, Inc. Oshman's Sporting Goods, Inc. Service Merchandise Co., Inc. Sportmart Inc. Sterling Inc. Victoria's Secret Stores

## Alliances

Comshare licenses third-party software programs and tools from various partners, including Arbor (Essbase), Btrieve Technology, Inc. (Btrieve database), Microsoft (Excel) and Strategic Mapping Inc. (Atlas View SDK).

Arbor's Essbase multidimensional database software is an integral part of the Commander Decision, Commander OLAP, ARTHUR Planning and Plan Monitor products.

## Competition

Major competitors, by product/service area, include the following:

- EIS market—Oracle Corporation, Information Resources, Inc. and Dun & Bradstreet Software.
- Financial reporting applications market—Hyperion Software Corporation.

## INPUT Assessment

Comshare's strengths include:

- Its successful transition from mainframe to client/server platforms
- Delivering complete decision support applications

Challenges over the coming year include:

- Strengthening penetration into niche markets
- Increasing the company's visibility



**COMSHARE, INC.**

3001 South State Street  
Ann Arbor, MI 48108  
Phone: (313) 994-4800  
Fax: (313) 994-5895

President & CEO:	Richard L. Crandall
Status:	Public Corporation
Stock Exchange:	NASDAQ
Total Employees:	999 (6/92)
Total Revenue:	\$119,173,700
Fiscal Year End:	6/30/92

**Key Points**

- Comshare is repositioning itself from its executive information systems (EIS) orientation to providing managerial applications software, which will serve the broader-based business information software products market.
- Comshare believes that this emphasis better portrays the breadth of Comshare's product offerings, which include not only executive information systems, but also software solutions for an entire range of managerial applications, including, financial consolidation and reporting, profit management and enterprise budgeting, sales analysis, and quality reporting systems.
- Comshare has made major development investments to redesign its mainframe-based products for client/server environments, and will be releasing new versions of various components of its flagship Commander product line for IBM OS/2 and Windows. In November 1993, Comshare released a new version of Commander EIS/MSS software designed for use with Windows.
- As planned, Comshare terminated its 26-year-old timesharing business by shutting down centers in Ann Arbor and London. The business was highly profitable, but had been in decline for years.

**Company Description**

Comshare develops, licenses, and supports applications software products designed to improve managerial effectiveness and business professional productivity. Comshare also provides implementation services for all its products, regional and national training, and user groups.

In July 1992, Comshare began marketing its software products and applications under the Commander™ name. Comshare's Commander product line consists of an integrated suite of client/server products. Some of the products currently operate in a distributed network that may include local-area networks (LANs), wide-area networks (WANs), or a combination. It is planned that, by the end of fiscal 1993, all of Comshare's Commander products will have this capability.

Comshare also offers certain industry-specific products and services to the telephone and retail industries.

**Company History**

Founded in 1966, Comshare was one of the earliest companies to offer generalized commercial timesharing (processing) services.

During the 1980s, the company began focusing its efforts on serving the decision support and executive information markets. The company also reoriented its business strategy to offer its proprietary software for use on in-house mainframes, microcomputers, and through its traditional processing services.

Revenue from processing services has continued to represent a declining percentage of total revenue since 1982. The company announced that fiscal 1992 would be the final full year of providing timesharing. As planned, the company closed its data center in Ann Arbor and London during the year.

**Financials**

Fiscal 1992 revenue was \$119.2 million, a 4% decrease from fiscal 1991 revenue of \$124.2 million.

- Net losses of \$11.1 million include unusual charges of \$15.3 million related to reducing the carrying value of certain software to its net realizable value by \$10.2 million. This resulted from the software industry's shortening product life cycles, new technology introductions, and platform changes. Unusual charges also included management actions or plans to reduce or relocate staff, and the write-off of related leasehold improvements of \$5.1 million.

A five-year financial summary follows:

**COMSHARE, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	6/92	6/91	6/90	6/89	6/88
Revenue	\$119.2	\$124.2	\$103.7	\$88.1	\$78.9
• Percent increase (decrease) from previous year	(4%)	20%	18%	12%	12%
Income (loss) before taxes	\$(13.0)	\$10.1	\$10.7	\$7.7	\$3.4
• Percent increase (decrease) from previous year	(229%)	(6%)	39%	126%	(9%)
• Gross margin	--	8%	10%	9%	4%
Net income	\$(11.1)	\$6.3	\$6.9	\$4.6	\$2.0
• Percent increase (decrease) from previous year	(276%)	(9%)	50%	130%	(9%)
• Net margin	--	5%	7%	5%	3%
Earnings (loss) per share	\$(2.10)	\$1.16	\$1.25	\$0.84	\$0.37
• Percent increase (decrease) from previous year	(281%)	7%	49%	127%	(8%)

(a) Includes unusual charges of \$15.3 million.

Comshare management attributes the decline in revenue during fiscal 1992 to a 54% decline in remote processing and other revenue, a 16% decrease in software license revenue, and a 2% decline in implementation services revenue. These declines were partially offset by a 32% increase in software maintenance revenues. International revenue increased 4% over fiscal 1991, while North American revenue decreased 13% from the prior year.

- Software license revenue decreased \$8.8 million. North American contributed 90% of the decrease and International contributed 10%. The decrease was primarily attributed to the recession in North America (which lengthened the sales cycle), and a worldwide reduction in average revenue per sale as a result of the shift from host software licenses to LAN-based PC software.
- Software maintenance revenue continued its growth pattern for International and North America. International software

maintenance revenue grew 34%, contributing 52% of the overall growth, while North America grew 30%, contributing 48% of the overall growth.

- Execucum Systems products (acquired in March 1991) contributed 9% of software license revenue, 19% of software maintenance revenue, and 8% of implementation services revenue for fiscal 1992.
- Remote processing revenue accounted for 4% of total revenue during fiscal 1992. Comshare does not expect to generate any revenue from processing in the future.

Research and product development expenses (before capitalization and amortization) were \$24.5 million (21% of revenue) in fiscal 1992, \$21.8 million (18% of revenue) in fiscal 1991, \$16.0 million (15% of revenue) in fiscal 1990, and \$13.8 million (16% of revenue) in fiscal 1989.

Revenue for the six months ending December 31, 1992 reached \$55.6 million compared to \$61.6 million for the same period in 1991. Net income was \$1.0 million, compared to \$1.5 million for the same period a year ago.

- Revenue declines were attributed to an industrywide slowdown in mainframe software sales as customers migrate to a new generation of client/server systems from their traditional host solutions. A weakening of non-U.S. currencies and the termination of Comshare's processing business also contributed to the decline.
- Comshare's new and existing client/server-based managerial applications software accounted for 62% of software license revenue in the quarter.

#### **Acquisitions/ Divestitures**

In March 1991, Comshare purchased the operating assets and business of Execucum Systems Corporation of Austin (TX) from MPSI Systems Inc. for approximately \$11.5 million. Execucum, with revenue of approximately \$19 million, provided decision support/executive information systems application software products. Its operations have been merged into Comshare.

During the fourth quarter of fiscal 1991, Comshare sold its Profiles Human Resource Management System software product line to Spectrum Human Resource Systems Corporation of Denver (CO).

Comshare has also sold its HP Profiles/3000 product line to Humanic Design Corp.

**Alliances**

A number of software vendors are value-added remarketers of Comshare products, including J.D. Edwards and Medicus Systems Corporation.

Comshare is a member of the Decision Support Systems (DSS) Design Council for the Information Warehouse framework and is an IBM SAA assistance vendor. The company has a development assistance relationship with DEC related to DEC's NAS standards and is a DEC Cooperative Marketing Partner. Comshare has various development agreements with other vendors, including NCR, Hewlett-Packard, Microsoft, and Fujitsu.

Comshare also has joint marketing agreements with Andersen Consulting and Dow Jones News/Retrieval.

**Employees**

As of June 30, 1992, Comshare had 999 employees. The company currently has approximately 1,000 employees.

**Competitors**

Major competitors, by product/service area, include the following:

- EIS software: Pilot Software and Information Resources
- Managerial applications (using DSS/EIS tools): Pilot Software, IMRS, and Information Resources
- DSS/EIS/merchandise planning (retail): Merchandise Management Systems and Advanced Cybernetics

**Key Products and Services**

A three-year summary of source of revenue follows:

**COMSHARE, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

	FISCAL YEAR					
	6/92		6/91		6/90	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$46.7	39%	\$55.5	45%	\$49.5	48%
Maintenance	43.8	37%	33.1	27%	20.2	19%
Implementation services	23.3	20%	23.8	19%	18.0	17%
Processing and other	5.4	4%	11.8	9%	16.0	16%
<b>TOTAL</b>	<b>\$119.2</b>	<b>100%</b>	<b>\$124.2</b>	<b>100%</b>	<b>\$103.7</b>	<b>100%</b>

*Software Products:*

Commander Series is a family of client/server products that assist managers in the automation of information access, integration, analysis, reporting, and delivery.

- Commander applications support financial consolidation and reporting, profit management and enterprise budgeting, sales analysis, quality reporting, modelling, and executive information systems.
- PC products are available for OS/2, DOS, Windows, and Macintosh environments. Host and server products support IBM MVS and VM, DEC VMS, Fujitsu MSP, HP MPE/XL, ICL VME, and various UNIX-based systems including those of NCR, DEC, HP, IBM, and Sun.
- The company's software products are licensed for use at over 2,700 customers' sites worldwide, of which some 2,350 are active, paying annual maintenance.
- Over 64,500 copies of current Comshare PC products have been licensed since their introduction, of which 19,500 copies were licensed in the past fiscal year.

Industry-specific products and services offered by Comshare include the following:

- Retrивue is a telephone directory assistance turnkey system that operates on Data General minicomputers. Retrивue gives a telephone operator immediate access to all telephone listings.
- Applications available include directory assistance, intercept, customer name and address, and business directory assistance.
- Retrивue pricing, including hardware and software, starts at \$75,000.
- In April 1990, Comshare introduced Retrивue-II, which provides advanced directory assistance features and an audio response unit.
- Commander ARTHUR, introduced in 1987, is a merchandise planning and performance tracking system for the retail industry. During fiscal 1991, Comshare integrated its EIS technology into ARTHUR.

#### *Implementation Services:*

Professional services provided by Comshare are focused on large-scale projects in application design and development, project management, and distributed system design and implementation using Comshare's software products.

Comshare software training courses are offered at customer locations, local Comshare offices, and Comshare training centers in Ann Arbor and London.

A University Support Program offers software licenses, documentation, and educational seminars at reduced rates to universities. Currently, approximately 450 universities are enrolled in the program.

#### **Industry Markets**

Comshare clients are primarily medium- to large-sized organizations in all industries and in national, state/provincial, and local governments. Primary users of Comshare products include executives, managers, business professionals, planners, financial analysts, marketing analysts, quality reporting specialists, and other knowledge workers.

#### **Geographic Markets**

A three-year geographic source of revenue summary follows:

**COMSHARE, INC.  
THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	6/92		6/91		6/90	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$51.3	43%	\$58.9	47%	\$53.0	51%
International	67.9	57%	65.3	53%	50.7	49%
<b>TOTAL</b>	<b>\$119.2</b>	<b>100%</b>	<b>\$124.2</b>	<b>100%</b>	<b>\$103.7</b>	<b>100%</b>

Comshare has general and sales offices throughout the U.S., Canada, Europe, and Australia.

- U.S. offices are located in Ann Arbor, Atlanta, Austin, Boston, Chicago, Cleveland, Dallas, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, San Francisco, Seattle, Washington, D.C., Waterbury, and Wilmington.
- Canadian offices are located in Calgary, Montreal, Ottawa, Toronto, and Vancouver.
- European offices are located in Belgium, France, Germany, the Netherlands, and the U.K.
- Australian offices are located in Melbourne and Sydney.

Independent agents and licensees are located in Argentina, Austria, Brazil, Chile, Denmark, Finland, Hong Kong, Ireland, Israel, Italy, Japan, Korea, Malaysia, Mexico, New Zealand, Norway, Peru, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, United Arab Emirates, and Venezuela.

## COMPANY PROFILE

---

**COMSHARE, INC.**  
3001 South State Street  
Ann Arbor, MI 48108  
(313) 994-4800

Richard L. Crandall, President and CEO  
Public Corporation, NASDAQ  
Total Employees: 1,125 (6/91)  
Total Revenue, Fiscal Year End  
6/30/91: \$124,165,700

---

### The Company

Comshare, Inc. provides applications software products, implementation (professional) services, and remote computing processing services to clients worldwide.

- The company's major executive information and decision support products include Commander™ Executive Information Systems (Commander EIS) for executive reporting, Commander™ FDC for financial reporting, System WR for decision support and management accounting applications, and IFPS/PLUS™ for financial planning.
- Comshare also offers certain industry-specific products and services to the telephone and retail industries.

Founded in 1966, Comshare was one of the earliest companies to offer generalized commercial timesharing (processing) services.

- During the 1980s the company began focusing its efforts on serving the decision support and executive information markets and reoriented its business strategy to offer its proprietary software for use on in-house mainframes and microcomputers, as well as through its traditional processing services.
- Revenues from processing services have continued to represent a declining percentage of total revenue since 1982. The company has announced that fiscal 1992 will be the final full year of providing timesharing and that it will close most of its data centers during fiscal 1992.

Fiscal 1991 revenue reached \$124.2 million, a 20% increase over fiscal 1990 revenue of \$103.7 million. Net income was \$6.3 million, compared to net income of \$6.9 million for fiscal 1990. A five-year financial summary follows:

**COMSHARE, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	6/91	6/90	6/89	6/88	6/87
Revenue	\$124.2	\$103.7	\$88.1	\$78.9	\$70.2
• Percent increase from previous year	20%	18%	12%	12%	2%
Income before taxes	\$10.1	\$10.7	\$7.7	\$3.4	\$3.7
• Percent increase (decrease) from previous year	(6%)	39%	126%	(9%)	55%
• Gross margin	8%	10%	9%	4%	5%
Net income	\$6.3	\$6.9	\$4.6	\$2.0	\$2.2
• Percent increase (decrease) from previous year	(9%)	50%	130%	(9%)	65%
• Net margin	5%	7%	5%	3%	3%
Earnings per share	\$1.16	\$1.25	\$0.84	\$0.37	\$0.40
• Percent increase (decrease) from previous year	7%	49%	127%	(8%)	67%

Comshare management attributes the revenue growth in fiscal 1991 to a 27% increase in software license and maintenance revenue and a 32% increase in implementation services revenue, which was offset by a 27% decrease in processing services and other revenue. International revenue increased 29% over the previous year, while revenue from North America increased 11%.

- Software license revenue increased \$6.1 million or 12%. International operations contributed 89% of the increase and North America contributed 11%. Commander EIS continues to have a major share of the worldwide market.
- Software maintenance revenue maintained a steady growth rate for both North America and international operations, growing 58% and 70%, respectively.
- A major portion of the growth in software license and maintenance revenue is primarily attribute to the growth in micro-based software products that are integrated with Comshare's mainframe products.

- Comshare expects its remote processing services revenue to disappear within the next fifteen months.

Research and product development expenses (before capitalization and amortization) were \$21.8 million (18% of revenue) in fiscal 1991, \$16.0 million (15% of revenue) in fiscal 1990, and \$13.8 million (16% of revenue) in fiscal 1989.

Revenue of \$61.6 million for the six months ending December 31, 1991 was unchanged from the same period in 1990. Net income was \$1.5 million, compared to \$3.4 million for the same period a year ago.

- Declines in revenues from software licenses and processing were offset by a 47% increase in maintenance revenues. The demand for mainframe products was down, however revenues from micro software licenses increased.
- Research and product development expenditures were \$8.9 million, compared to \$6.9 million for the same period a year ago.

In March 1991, Comshare announced an agreement to purchase the operating assets and business of Execucom Systems Corporation of Austin (TX) from MPSI Systems Inc. for \$11.6 million.

- Execucom, with revenues of approximately \$19 million, provides decision support/executive information systems application software products.
- As part of the agreement, MPSI is a value-added reseller of Execucom products.

During the fourth quarter of fiscal 1991, Comshare sold its Profiles Human Resource Management System software product line to Spectrum Human Resource Systems Corporation of Denver (CO). According to Comshare management, selling Profiles (which represented less than 2% of the company's total revenue) will help Comshare to keep its line of decision support and executive information software products the focus of the company's efforts.

Comshare has also sold its HP Profiles/3000 product line to Humanic Design Corp.

As of June 30, 1991, Comshare had 1,125 employees. The company currently has approximately 1,050 employees.

Major competitors, by product/service area, include the following:

- Decision support: Information Resources and IMRS
- EIS software: Pilot Executive Software, Information Resources, and Holistic Systems

### Key Products and Services

Approximately 72% of Comshare's fiscal 1991 revenue was derived from application software products and associated maintenance services, 19% from professional (implementation) services, and 9% from processing and other.

A three-year summary of source of revenue follows:

**COMSHARE, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
(\$ millions)

	FISCAL YEAR					
	6/91		6/90		6/89	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$55.5	45%	\$49.5	48%	\$36.9	42%
Maintenance	33.1	27%	20.2	19%	14.1	16%
Implementation services	23.8	19%	18.0	17%	16.3	18%
Processing and other (a)	11.7	9%	16.0	16%	20.8	24%
<b>TOTAL</b>	<b>\$124.2</b>	<b>100%</b>	<b>\$103.7</b>	<b>100%</b>	<b>\$88.1</b>	<b>100%</b>

(a) Includes \$998,000 from the sale of the Profiles product line.

Comshare's products and services primarily target two application areas: executive information systems and decision support systems.

- The company's host and host server software products are licensed for use at over 2,200 customers' computers worldwide, of which some 2,000 are paying annual maintenance and enhancement fees.
- Over 58,000 copies of current Comshare PC products have been licensed since their introduction, of which 21,000 copies were licensed in the past fiscal year.

Commander EIS, introduced in 1985, is a family of mainframe and microcomputer software products that assist the nontechnical top level business executive in the automation of information access, integration, analysis, reporting, and delivery.

- Features include a graphical user interface; open architecture and data integration tools permitting data feeds to the EIS from virtually any source; and nonprogramming-style builder tools that permit information providers in functional departments (marketing, accounting, and human resources) to prepare information for the EIS.
- Commander EIS emphasizes reporting strategic information organized into executive applications, which include:
  - Briefing Book™, which delivers reports that can be formatted to include tables, graphs, and/or text.
  - Execu-View™ is a windowing capability that provides an interface to Comshare's System W modeling, ARTHUR, and DB2 data bases for ad hoc analysis.
  - Newswire™ gives the executive access, using a touch screen or a mouse, to the Dow Jones News Retrieval service.
  - Redi-Mail™ simplifies the sending and receiving of electronic mail.
  - Reminder™ stores documents and automatically recalls them at a later date, reminding executives to follow through on projects and issues.
- Commander EIS runs on computers running under VM/CMS or MVS/TSO, and DEC VAX systems running under VMS. Microcomputer support is available for DOS, Windows, OS/2 EE, OS/2 2.0, and Macintosh II series systems. Comshare is committed to IBM's SAA and DEC's NAS guidelines.
- Commander EIS for IBM mainframes ranges in price from \$60,000 to \$225,600, depending on the size of the machine.
- Commander EIS for DEC computers ranges from \$54,000 to \$186,000, depending on the size of the machine.
- There are currently over 900 Commander EIS sites with over 35,000 users.

- Comshare also offers Commander QuickStart and Commander LAN for \$48,000.

System W, introduced in 1983, is a decision support system that integrates the mainframe and microcomputer for modeling, forecasting, statistical analysis, and reporting. Built-in data management, graphics, communications, and interfaces for data acquisition are also provided.

- System W components include:
  - One-Up<sup>®</sup>, introduced in 1989, is a fully integrated five-dimensional microcomputer modeling component of System W. One-Up generated revenue of over \$5 million during fiscal 1990. Over 13,500 copies of One-Up have been licensed.
  - Modeling, Comshare's initial decision support offering, provides modeling, investigative analysis (including goal seeking), and customized formal reporting.
  - Datman<sup>™</sup>, for relational data base management
  - Dynamic pipeline links to DB2, SQL/DS, FOCUS, ORACLE, Ingres, Rdb/VMS, EASYTRIEVE PLUS, free- and fixed-format files.
- System W is primarily designed for IBM and compatible mainframes running VM/CMS or MVS/TSO, DEC systems running under VMS, and Fujitsu systems running under MSP. Microcomputer components run on the IBM PC/AT and PS/2, Compaq DESKPRO 386, and compatibles.
- System W pricing ranges from \$50,000 to \$243,200 for IBM mainframes and \$43,000 to \$197,000 for DEC systems.
- There are currently over 750 System W client sites worldwide.

Commander FDC is a LAN-based financial reporting system that integrates Pyramid (acquired with Orion Systems in early 1990) with Comshare's One-Up and Commander EIS products.

- The product provides consolidation accounting, statutory and management reporting, budgeting, financial modeling and analysis, and executive access to reports.
- Commander FDC pricing varies with the number of PCs involved in the application. Prices start at \$40,000 and average \$70,000.

As a result of the acquisition of Execucom, Comshare has expanded its software products for financial planning and decision support applications.

- Products are available for IBM and compatible, DEC, Hewlett-Packard, and NCR systems.
- IFPS/PLUSTM, the Interactive Financial Planning System, includes features for modeling, model analysis, relational data base management, and application development.
- Paradigm is a data interpretation system uses artificial intelligence and workstation technology to distill massive amounts of descriptive and numeric information.
- VantagePoint is a microcomputer-based graphics and user interface tool that can front-end most mainframe or minicomputer packages to deliver information and planning support to corporate executives.

Industry-specific products and services offered by Comshare include the following:

- Retrивue is a telephone directory assistance turnkey system that operates on Data General minicomputers. Retrивue gives a telephone operator immediate access to all telephone listings.
  - Applications available include directory assistance, intercept, customer name and address, and business directory assistance.
  - Retrивue pricing, including hardware and software, starts at \$75,000.
  - In April 1990, Comshare introduced Retrивue-II, which provides advanced directory assistance features and an audio response unit.
- ARTHUR, introduced in 1987, is a merchandise planning and performance tracking system for the retail industry. During fiscal 1991, Comshare integrated its EIS technology into ARTHUR.

Professional services provided by Comshare are focused on large-scale projects in application design and development, project management, and distributed system design and implementation using Comshare's software products.

- Comshare software training courses are offered at customer locations, local Comshare offices, and Comshare training centers in London, Ann Arbor, and Austin.

A University Support Program offers software licenses, documentation, and educational seminars at reduced rates to universities. Currently, approximately 450 universities are enrolled in the program.

## Alliances

A number of software vendors are value-added remarketers of Comshare products, including Dun & Bradstreet Software, J.D. Edwards, and Medicus Systems Corporation.

Comshare is an IBM SAA assistance vendor, has a development assistance relationship with DEC related to DEC's NAS standards, and is a DEC Cooperative Marketing Partner. Comshare has various agreements with other hardware vendors, including NCR and Fujitsu.

Comshare also has joint marketing agreements with Andersen Consulting, Price Waterhouse, and Dow Jones News/Retrieval.

## Industry Markets

Comshare clients are primarily medium to large organizations in all industries and in national, state/provincial, and local governments. Individuals within those organizations who are primary users of Comshare products include executives, managers, business professionals, planners, financial analysts, marketing analysts, quality reporting specialists, and other knowledge workers.

## Geographic Markets

A three-year geographic source of revenue summary follows:

COMSHARE, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)

ITEM	FISCAL YEAR					
	6/91		6/90		6/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$58.9	47%	\$53.0	51%	\$47.3	54%
International	65.3	53%	50.7	49%	40.8	46%
<b>TOTAL</b>	<b>\$124.2</b>	<b>100%</b>	<b>\$103.7</b>	<b>100%</b>	<b>\$88.1</b>	<b>100%</b>

Comshare has general and sales offices throughout the U.S., Canada, Europe, and Australia.

- U.S. offices are located in Ann Arbor, Atlanta, Austin, Boston, Chicago, Cleveland, Dallas, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, San Francisco, Washington, D.C., Waterbury, and Wilmington.
- Canadian offices are located in Calgary, Montreal, Ottawa, Toronto, and Vancouver.
- European offices are located in Belgium, Denmark, France, Germany, the Netherlands, and the U.K.
- Australian offices are located in Canberra, Melbourne, and Sydney.

Independent agents and licensees are located in Argentina, Austria, Brazil, Chile, Finland, Hong Kong, Ireland, Israel, Italy, Japan, Korea, Malaysia, Mexico, Norway, Peru, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, and Venezuela.



## COMPANY PROFILE

---

**COMSHARE, INC.**  
3001 South State Street  
Ann Arbor, MI 48108  
(313) 994-4800

Richard L. Crandall, President and CEO  
Public Corporation, NASDAQ  
Total Employees: 980 (6/90)  
Total Revenue, Fiscal Year End  
6/30/90: \$103,700,000

---

### The Company

Comshare, Inc. provides application software products, implementation (professional) services, and remote computing processing services to clients worldwide. The company's major products include System W<sup>R</sup> for decision support and management accounting applications, Commander<sup>TM</sup> Executive Information Systems (Commander EIS) for executive reporting, Commander<sup>TM</sup> FDC for financial reporting, and Profiles<sup>TM</sup> for human resources information management. Comshare also offers certain industry-specific products and services to the telephone and retail industries.

- Founded in 1966, Comshare was one of the earliest companies to offer generalized commercial timesharing (processing) services.
- During the 1980s the company began focusing its efforts on serving the decision support and executive information markets and reoriented its business strategy to offer its proprietary software for use on in-house mainframes and microcomputers, as well as through its traditional processing services.
- Revenues from processing services have continued to represent a declining percentage of total revenue since 1982. Software products and professional services revenue contributed approximately 85%, 76%, and 66% to total revenue for fiscal 1990, 1989, and 1988, respectively.

Revenue for the six months ending December 31, 1990 reached \$61.7 million, a 25% increase over \$49.5 million for the same period in 1989. Net income declined 12%, from \$3.9 million to \$3.4 million.

- North American and international revenues increased. Growth in product revenue came primarily from Commander EIS and Commander FDC.

- Costs and expenses rose 28% due to planned investments in the areas of sales, customer support, and product development which the company made at the start of fiscal 1991 as part of its strategy for growth.

Fiscal 1990 revenue reached \$103.7 million, an 18% increase over fiscal 1989 revenue of \$88.1 million. Net income rose 50%, from \$4.6 million in fiscal 1989, to \$6.9 million in fiscal 1990. A five-year financial summary follows:

**COMSHARE, INC.**  
**FIVE-YEAR FINANCIAL SUMMARY**  
 (\$ millions, except per share data)

ITEM	FISCAL YEAR				
	6/90	6/89	6/88	6/87	6/86
Revenue	\$103.7	\$88.1	\$78.9	\$70.2	\$68.9
• Percent increase (decrease) from previous year	18%	12%	12%	2%	11%
Income before taxes	\$10.7	\$7.7	\$3.4	\$3.7	\$2.4
• Percent increase (decrease) from previous year	39%	128%	(9%)	55%	*
• Gross margin	10%	9%	4%	5%	3%
Net income	\$6.9	\$4.6	\$2.0	\$2.2	\$1.3
• Percent increase (decrease) from previous year	50%	(a) 130%	(8%)	65%	454%
• Net margin	7%	5%	3%	3%	2%
Earnings per share (b)	\$1.25	\$0.84	\$0.37	\$0.40	\$0.24
• Percent increase (decrease) from previous year	49%	127%	(8%)	67%	300%

\* Percent change exceeds 1,000%.

- (a) Fiscal 1989 results include a loss of \$337,000 on the write-off of a receivable established in 1985 in connection with the disposition of Computer Research Company, a Comshare subsidiary that provided general-purpose processing services.
- (b) Restated to reflect a 2-for-1 stock split in May 1990.

Comshare management attributes the revenue growth in fiscal 1990 to a 37% increase in software license and maintenance revenue and a 10% increase in implementation services revenue, which was offset by a 23% decrease in processing services and other revenue. International revenue increased 24% over the

previous year, with international agents accounting for 45% of international revenue growth.

- Software license revenue increased \$8.9 million, or 58% for international operations, while North American operations increased \$4.4 million or 21% at comparative exchange rates. Commander EIS continues to have a major share of the worldwide market. Revenues were further benefited by Commander FDC, which had a strong performance following its release in the quarter ending March 1990.
- Software maintenance revenue maintained a steady growth rate for both North America and international operations, growing 44% and 50%, respectively, at comparative exchange rates.

Research and product development expense (before computer software capitalization and amortization) was \$15.5 million (15% of revenue) in fiscal 1990, \$13.6 million (15% of revenue) in fiscal 1989, and \$12.8 million (16% of revenue) in fiscal 1988.

Acquisitions made by Comshare include the following:

- In March 1991, Comshare announced an agreement to purchase the operating assets and business of Execucom Systems Corporation of Austin (TX) from MPSI Systems Inc. for approximately \$12 million.
  - Execucom, with revenues of approximately \$19 million, provides decision support/executive information systems application software products.
  - As part of the agreement, MPSI will become a value-added reseller of Execucom products.
- In July 1990, Comshare acquired the sales agency agreement and hired the employees of 54 North, Ltd. of Wilmington (DE). Terms of the purchase were not disclosed. 54 North has been the North American sales agent for Comshare in the retail vertical market since 1988.
- In January 1990, Comshare acquired Orion Systems of Waterbury (CT) for an undisclosed amount of cash.
  - Orion Systems, founded in 1984, developed Pyramid 2000, a financial consolidation and reporting system for large corporations that operates on microcomputers or in a local-area network.

- Orion Systems had approximately 20 employees at the time of the acquisition.
- Comshare has broadened Pyramid's functionality and is marketing the product worldwide as Commander FDC (Financial Data Consolidation).

Recent announcements/agreements include the following:

- During the second quarter of fiscal 1991, Comshare announced it is now a member of DEC's Cooperative Marketing Program. The two companies will jointly market Comshare's Commander EIS and System W products in the U.S. Comshare will also enhance its product line to use Network Application Support (NAS), DEC's software for application integration in a networked, multivendor environment.
- Also during the quarter, Comshare announced a marketing alliance with J.D. Edwards and Company whereby J.D. Edwards will market Commander EIS in conjunction with its business application software to IBM AS/400 users in the industries it serves, including financial services, manufacturing, distribution, and government.
- In April 1990 Comshare and Exis, a technology firm of KPMG Peat Marwick, announced a marketing alliance whereby Exis consultants will implement Apple Macintosh computer-based executive information systems and decision support systems that integrate with Comshare's Commander EIS and System W products. Comshare and Exis will also share future product version, joint marketing events, and sales calls.
- In March 1990, Comshare formed an alliance with Ross Systems and Price Waterhouse whereby Ross will license and integrate Comshare's Commander EIS with its own family of software products for DEC VAX computers. Price Waterhouse will support the agreement through implementation and consulting services.
- Comshare signed a value-added reseller agreement with Medicus Systems Corporation, a health care software vendor, to develop and market health care applications integrated with Commander EIS.

As of June 30, 1990, Comshare had 980 employees. The company currently has approximately 1,100 employees.

Major competitors, by product/service area, include the following:

- Decision support: Pilot Executive Software, Information Resources, and IBM
- EIS software: Pilot Executive Software and IBM

### Key Products and Services

Approximately 67% of Comshare's fiscal 1990 revenue was derived from application software products and associated maintenance services, 17% from professional (implementation) services, and 16% from processing and other.

A three-year summary of source of revenue follows:

**COMSHARE, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
 (\$ millions)

	FISCAL YEAR					
	6/90		6/89		6/88	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$49.5	48%	\$36.9	42%	\$26.8	34%
Maintenance	20.2	19%	14.1	16%	9.8	12%
Implementation services	18.0	17%	16.3	18%	15.2	19%
Processing and other	16.0	16%	20.8	24%	27.1	35%
<b>TOTAL</b>	<b>\$103.7</b>	<b>100%</b>	<b>\$88.1</b>	<b>100%</b>	<b>\$78.9</b>	<b>100%</b>

Comshare's products and services primarily target three application areas: executive information systems, decision support systems, and human resource management.

Commander EIS, introduced in 1985, is a family of mainframe and microcomputer software products that assist the nontechnical top level business executive in the automation of information access, integration, analysis, reporting, and delivery.

- Features include a graphical user interface; open architecture and data integration tools permitting data feeds to the EIS from virtually any source; and nonprogramming-style builder tools that permit information providers in functional departments (marketing, accounting, and human resources) to prepare information for the EIS.

- Commander EIS emphasizes reporting strategic information organized into executive applications, which include:
  - Briefing Book™, which delivers reports that can be formatted to include tables, graphs, and/or text.
  - Execu-View™ is a windowing capability that provides an interface to Comshare's System W modeling, ARTHUR, and DB2 data bases for ad hoc analysis.
  - Newswire™ gives the executive access, using a touch screen or a mouse, to the Dow Jones News Retrieval service.
  - Redi-Mail™ simplifies the sending and receiving of electronic mail.
  - Reminder™ stores documents and automatically recalls them at a later date, reminding executives to follow through on projects and issues.
- Commander EIS runs on computers running under VM/CMS or MVS/TSO, and DEC VAX systems running under VMS. Microcomputer support is available for DOS, OS/2 EE, and Macintosh II series systems. Comshare is committed to IBM's SAA and DEC's NAS guidelines.
- Commander EIS for IBM mainframes ranges in price from \$60,000 to \$225,600, depending on the size of the machine.
- Commander EIS for DEC computers ranges from \$54,000 to \$186,000, depending on the size of the machine.
- There are currently over 500 Commander EIS sites with over 20,000 users.
- Comshare also offers Commander QuickStart and Commander LAN for \$48,000.

System W, introduced in 1983, is a decision support system that integrates the mainframe and microcomputer for modeling, forecasting, statistical analysis, and reporting. Built-in data management, graphics, communications, and interfaces for data acquisition are also provided.

- System W components include:
  - Modeling, Comshare's initial decision support offering,

provides modeling, investigative analysis (including goal seeking), and customized formal reporting.

- Datman™, for relational data base management
- Dynamic pipeline links to DB2, SQL/DS, FOCUS, ORACLE, IDMS, IMS, TOTAL, SUPRA, and DATACOM/DB
- One-Up<sup>®</sup>, introduced in 1989, is a fully integrated five-dimensional microcomputer modeling component of System W. One-Up generated revenue of over \$5 million during fiscal 1990. Over 9,500 copies of One-Up have been licensed.
- System W is primarily designed for IBM and compatible mainframes running VM/CMS or MVS/TSO and DEC systems running under VMS. Microcomputer components run on the IBM PC/AT and PS/2, Compaq DESKPRO 386, and compatibles.
- System W pricing ranges from \$50,000 to \$243,200 for IBM mainframes and \$43,000 to \$197,000 for DEC systems.
- There are currently over 500 System W client sites worldwide.

Commander FDC is a LAN-based financial reporting system that integrates Pyramid (acquired with Orion Systems in early 1990) with Comshare's One-Up and Commander EIS products.

- The product provides consolidation accounting, statutory and management reporting, budgeting, financial modeling and analysis, and executive access to reports.
- Commander FDC pricing varies with the number of PCs involved in the application. Prices start at \$40,000 and average \$70,000.

The Profiles product line provides human resources information management via a microcomputer, minicomputer, or processing services.

- Profiles/PC, introduced in 1984, is a microcomputer-based personnel recordkeeping and reporting system. Application tracking and job evaluation features are also available.
- Profiles/PC runs on IBM and compatible microcomputers and ranges in price from \$2,400 to \$7,200.

- In addition to serving as a standalone system, it can be linked to Comshare's processing service for consolidation and analysis of data from multiple locations.
- There are currently over 1,800 installations of Profiles/PC.
- Profiles/3000 is a human resources management software package designed for HP 3000 minicomputers that provides personnel recordkeeping and reporting. Priced at \$25,500, there are currently over 175 Profiles/3000 installations.

Other industry-specific products and services offered by Comshare include the following:

- Retrивue is a telephone directory assistance turnkey system that operates on Data General minicomputers. Retrивue gives a telephone operator immediate access to all telephone listings.
- Applications available include directory assistance, intercept, and dial assistance charging.
- Retrивue pricing, including hardware and software, starts at \$100,000.
- In April 1990, Comshare introduced Retrивue-II, which provides advanced directory assistance features and an audio response unit.
- ARTHUR, introduced in 1987, is a merchandise planning and performance tracking system for the retail industry.

As a result of the acquisition of Execucom, Comshare has expanded its software products for financial planning and decision support applications.

- Products are available for IBM and compatible mainframes; DEC and Hewlett-Packard minicomputers; and MS-DOS microcomputers.
- IFPS/PLUSTM, the Interactive Financial Planning System, includes features for multidimensional modeling, model analysis, relational data base management, and application development.
- Corporate DSS is a decision support product for large commercial and government organizations based on IFPS/PLUS and includes extensions for presentation graphics, data import, optimization, and distributed planning.

- VantagePoint is a microcomputer-based graphics and user interface tool that can front-end most mainframe or minicomputer packages to deliver information and planning support to corporate executives.
- Consulting and educational services are also provided to software clients.
- A University Support Program offers software licenses, documentation, and educational seminars at reduced rates to universities. Currently, approximately 125 universities are enrolled in the program.

Professional services provided by Comshare are focused on large-scale projects in application design and development, project management, and distributed system design and implementation using Comshare's software products.

- Comshare software training courses are offered at customer locations, local Comshare offices, and Comshare training centers in London and Ann Arbor.

### Industry Markets

Comshare clients are primarily medium to large industrial corporations that purchase the company's decision support, executive reporting, and human resource management products and services. Other key clients include accounting firms, banks, telephone companies, and foreign governments.

### Geographic Markets

A three-year geographic source of revenue summary follows:

COMSHARE, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)

ITEM	FISCAL YEAR					
	6/90		6/89		6/88	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$53.0	51%	\$47.3	54%	\$41.3	52%
International	50.7	49%	40.8	46%	37.6	48%
<b>TOTAL</b>	<b>\$103.7</b>	<b>100%</b>	<b>\$88.1</b>	<b>100%</b>	<b>\$78.9</b>	<b>100%</b>

U.S. offices are located in Ann Arbor, Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, San Francisco, Washington, D.C., Waterbury, and Wilmington.

COMSHARE Limited, Comshare's Canadian subsidiary, is headquartered in Etobicoke (Toronto). Other Canadian offices are located in Calgary, Montreal, Ottawa, and Vancouver.

Comshare International, BV, Comshare's European subsidiary, is headquartered in London. Other offices are located in Belgium, France, Germany, and the Netherlands.

In April 1990, the Comshare portion of an Australian agency operation became a direct sales and service region, with offices in four Australian cities.

Independent agents and licensees are located in Argentina, Brazil, Finland, Hong Kong, Ireland, Italy, Japan, Malaysia, Norway, the Philippines, Singapore, Spain, Sweden, and Switzerland.

## COMPANY PROFILE

---

**COMSHARE, INC.**  
3001 South State Street  
Ann Arbor, MI 48108  
(313) 994-4800

Richard L. Crandall, President and CEO  
Public Corporation, NASDAQ  
Total Employees: 836 (6/89)  
Total Revenue, Fiscal Year End  
6/30/89: \$88,088,000

---

### The Company

Comshare, Inc. provides application software products, implementation (professional) services, and remote computing processing services to clients worldwide. The company's major products include System W<sup>R</sup> DSS for decision support and management accounting applications, Commander<sup>TM</sup> Executive Information Systems (Commander EIS) for executive reporting, Commander<sup>TM</sup> FDC for financial reporting, and Profiles<sup>TM</sup> for human resources information management. Comshare also offers certain industry-specific products and services to the telephone, retail, and petroleum industries.

- Founded in 1966, Comshare was one of the earliest companies to offer generalized commercial timesharing (processing) services.
- During the 1980s the company began focusing its efforts on serving the decision support and executive information markets and reoriented its business strategy to offer its proprietary software for use on in-house mainframes and microcomputers, as well as through its traditional processing services.
- Revenues from processing services have continued to represent a declining percentage of total revenue since 1982. Software products and professional services revenue contributed approximately 76%, 66%, and 56% to total revenue for fiscal 1989, 1988, and 1987, respectively.

Total fiscal 1989 revenue reached \$88.1 million, a 12% increase over fiscal 1988 revenue of \$78.9 million. Net income rose 130%, from \$2 million in fiscal 1988 to \$4.6 million in fiscal 1989. A five-year financial summary follows:

**COMSHARE, INC.**  
**FIVE-YEAR FINANCIAL SUMMARY**  
(\$ millions, except per share data)

ITEM	FISCAL YEAR				
	6/89	6/88	6/87	6/86	6/85
Revenue	\$88.1	\$78.9	\$70.2	\$68.9	\$62.0
• Percent increase (decrease) from previous year	12%	12%	2%	11%	(6%)
Income (loss) before taxes	\$7.7	\$3.4	\$3.7	\$2.4	\$(0.2)
• Percent increase (decrease) from previous year	128%	(9%)	55%	*	(107%)
• Gross margin	9%	4%	5%	3%	--
Net income (loss)	\$4.6	\$2.0	\$2.2	\$1.3	\$(0.4)
• Percent increase (decrease) from previous year	130%	(8%)	65%	454%	(125%)
• Net margin	5%	3%	3%	2%	--
Earnings (loss) per share	\$1.68	\$0.74	\$0.79	\$0.48	\$(0.11)
• Percent increase (decrease) from previous year	122%	(6%)	65%	536%	(130%)

\* Percent change exceeds 1,000%.

(a) Fiscal 1989 results include a loss of \$337,700 (\$0.12 per share) on the write-off of a receivable established in 1985 in connection with the disposition of Computer Research Company, a Comshare subsidiary that provided general-purpose processing services.

Comshare management attributes the revenue growth in fiscal 1989 to a 30% increase in software and professional services revenue, which offset a 25% decline in processing services revenue.

- The growth in software sales was generated from Commander EIS, along with continued sales of the System W Decision Support System. Software and professional services revenue increased \$11.1 million (46%) in North America and \$4.7 million (17%) internationally.
- Processing revenue declined \$5.9 million (35%) in North America and \$0.6 million (7%) internationally.

Research and development costs are charged to operations as incurred. Amounts charged to expense were approximately \$3.0 million, \$3.5 million, and \$3.1 million for fiscal 1989, 1988, and 1987, respectively.

Revenue for the nine months ending March 31, 1990 reached \$74.8 million, a 16% increase over \$64.7 million for the same period in 1989. Net income rose 59%, from \$3.3 million to nearly \$5.2 million.

- For the quarter ending December 31, 1989, EIS and DSS software revenue grew approximately 40% over a year ago. Results were attributed to new customers and add-on purchases by current customers, as well as the increased acceptance of executive information systems throughout Europe and the Far East.

In January 1990, Comshare acquired Orion Systems of Waterbury (CT) for an undisclosed amount of cash.

- Orion Systems, founded in 1984, developed Pyramid 2000, a financial consolidation and reporting system for large corporations that operates on microcomputers or in a local-area network.
- Orion Systems had approximately 20 employees at the time of the acquisition.
- Comshare has broadened Pyramid's functionality and is marketing the product worldwide as Commander FDC (Financial Data Consolidation).

Recent announcements/agreements include the following:

- In March 1990, Comshare formed an alliance with Ross Systems whereby Ross will license and integrate Comshare's Commander EIS with its own family of software products for DEC VAX computers.
- IBM and Comshare extended the Cooperative Software Agreement for Commander EIS into 1991. IBM sells a special version of Commander EIS (Commander EIS/SQL) through its North American sales force.
- Comshare signed a value-added reseller agreement with Medicus Systems Corporation, a health care software vendor, to develop and market health care applications integrated with Commander EIS.

As of June 30, 1989, Comshare had 836 employees. The company currently has 920 employees.

Major competitors, by product/service area, include the following:

- Decision support software: Thorn-EMI, Execucom, Information Resources, and IBM.
- EIS software: Execucom and Pilot Executive Software.
- Processing services: IBM, General Electric Information Services Company, Control Data, Boeing Computer Services, and McDonnell Douglas Information Systems Group.

### Key Products and Services

INPUT estimates approximately 56% of Comshare's fiscal 1989 revenue was derived from application software products, 20% from professional services, and over 23% from processing services.

- Commander EIS contributed approximately 50% to software revenue, System W contributed about 40%, and other products contributed the remaining 10%.

A three-year summary of source of revenue, as provided by Comshare, follows:

### COMSHARE, INC. THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR					
	6/89		6/88		6/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products and professional services	\$67.3	76.4%	\$51.8	65.6%	\$39.2	55.9%
Processing services	19.9	22.6%	26.5	33.6%	29.9	42.6%
Other	0.9	1.0%	0.6	0.8%	1.1	1.5%
<b>TOTAL</b>	<b>\$88.1</b>	<b>100%</b>	<b>\$78.9</b>	<b>100%</b>	<b>\$70.2</b>	<b>100.0%</b>

Comshare's products and services primarily target three application areas: decision support and management accounting, executive reporting, and human resource management.

Commander EIS, introduced in 1985, is a family of mainframe and microcomputer software products that assist the nontechnical top level business executive in the automation of information access, integration, analysis, reporting, and delivery.

- Features include a graphical user interface; open architecture and data integration tools, permitting data feeds to the EIS from virtually any source; and nonprogramming-style builder tools that permit information providers in functional departments (marketing, accounting, and human resources) to prepare information for the EIS.
- Commander EIS emphasizes reporting strategic information organized into executive applications, which include:
  - Briefing Book™, which delivers reports that can be formatted to include tables, graphs, and/or text.
  - Newswire™ gives the executive access, using a touch screen or a mouse, to the Dow Jones News/Retrieval service.
  - Execu-View™ is a windowing capability that provides an interface to Comshare's System W modeling data base for ad hoc analysis.
  - Redi-Mail™ simplifies the sending and receiving of electronic mail.
  - Reminder™ stores documents and automatically recalls them at a later date, reminding executives to follow through on projects and issues.
- Commander EIS runs on computers running under VM/CMS or MVS/TSO, and DEC VAX systems running under VMS. Microcomputer support is available for DOS, OS/2 EE, and Macintosh II series systems. Comshare is committed to IBM's SAA and DEC's NAS guidelines.
- Commander EIS for IBM mainframes ranges in price from \$50,000 to \$300,000, depending on the size of the machine, and includes software for 10 executive workstations.
- Commander EIS for DEC computers ranges from \$54,000 to

\$158,000, depending on the size of the machine, and comes with 10 copies of workstation software.

- There are currently over 350 Commander EIS sites with over 15,000 users.

System W, introduced in 1983, is a decision support system that integrates the mainframe and microcomputer for modeling, forecasting, statistical analysis, and reporting. Built-in data management, graphics, communications, and interfaces for data acquisition are also provided.

- System W components include:
  - Modeling, Comshare's initial decision support offering, provides modeling, investigative analysis (including goal seeking), and customized formal reporting.
  - Datman™, for relational data base management.
  - SQL Pipeline, a dynamic link to SQL/DS data.
  - File Power™, a data acquisition module.
  - Builders Pack, for application customizing and packaging.
  - Forecasting, for multidimensional statistical forecasting.
  - Graphics, for color business graphics.
  - Communications, a mainframe communications module for data transmission between a microcomputer and mainframe.
  - One-Up, introduced in 1989, is a five-dimensional microcomputer version of System W. One-Up generated over \$2 million in license fees during fiscal 1989.
- System W is primarily designed for IBM and compatible mainframes running VM/CMS or MVS/TSO and DEC systems running under VMS. Microcomputer components run on the IBM PC/AT and PS/2, Compaq DESKPRO 386, and compatibles.
- System W pricing ranges from \$50,000 to \$201,000 for IBM mainframes and \$43,000 to \$164,100 for DEC systems.
- There are currently over 500 System W client sites worldwide.

Commander FDC is a PC-based financial reporting system that integrates Pyramid (acquired with Orion Systems in early 1990) with Comshare's System W and Commander EIS products.

- The product provides consolidation accounting, statutory and management reporting, budgeting, financial modeling and analysis, and executive access to reports.
- Commander FDC pricing varies with the number of PCs involved in the application. Prices start at \$50,000 and average \$95,000.

The Profiles product line provides human resources information management via a microcomputer, minicomputer, or processing service.

- Profiles/PC, introduced in 1984, is a microcomputer-based personnel record keeping and reporting system. Application tracking and job evaluation features are also available.
  - Profiles/PC runs on IBM and compatible microcomputers and ranges in price from \$3,800 to \$15,000.
  - In addition to serving as a standalone system, it can be linked to Comshare's processing service for consolidation and analysis of data from multiple locations.
  - There are currently over 1,600 installations of Profiles/PC.
- Profiles/3000 is a human resources management software package designed for HP 3000 minicomputers that provides personnel recordkeeping and reporting. Priced at \$25,500, there are currently over 155 Profiles/3000 installations.
- Command HRM, introduced in February 1990, is an ORACLE/SQL-based human resource management system for networked PCs and DEC VAX computers that provides employee record keeping and reporting, plus analytical modeling and executive reporting functions.
- The Application Library is a processing service that provides salary administration, human resource planning, EEO compliance, and general administration.

Comshare offers large-scale processing services from data centers in Ann Arbor (MI) and London. The operations of the Toronto data center were phased out during 1988.

- A profile of the key applications offered on Comshare's network is presented in the exhibit.
- Major products offered on Comshare's network are summarized as follows:
  - System W decision support system.
  - Profiles human resource management system.
  - Questor, Comshare's data base management system.
  - Telecommunications services (also known as 4.1.1) is an integrated system for telephone companies that controls administrative activities such as telephone number assignment and voice traffic load balancing. The deregulation of AT&T has opened additional markets in selling the product to independent telephone companies and in selling System W to new operating companies for their analytical work.

Other industry-specific products and services offered by Comshare include the following:

- Retrivue is a telephone directory assistance turnkey system that operates on Data General minicomputers. Retrivue gives a telephone operator immediate access to all telephone listings.
  - Applications available include directory assistance, intercept, and dial assistance charging.
  - Retrivue pricing, including hardware and software, starts at \$100,000.
  - In April 1990, Comshare introduced Retrivue-II, which provides advanced directory assistance features and an audio response unit.
- Arthur, introduced in 1987, is a software product for IBM computers that provides inventory distribution and planning modeling for retailers.
- PETROFISK is a financial and tax planning model for the petroleum industry that is marketed outside the U.S.

## EXHIBIT

COMSHARE, INC.  
KEY NETWORK APPLICATIONS

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<b>Operating Environment</b> <ul style="list-style-type: none"> <li>- 1 IBM 4381, VM/CMS, MVS/TSO</li> <li>- 2 IBM 3081s, VM/CMS, MVS/TSO</li> <li>- 49 Sigma 9s, Commander II</li> </ul>	<b>Human Resource Management (Profiles)</b> <ul style="list-style-type: none"> <li>- EEO Reporting</li> <li>- Labor Relations</li> <li>- Employee Benefits</li> <li>- Compensation</li> <li>- Salary Administration</li> <li>- Retirement Planning</li> <li>- Skills Inventory</li> </ul>
<b>Programming Languages Supported</b> <ul style="list-style-type: none"> <li>- BASIC</li> <li>- COBOL</li> <li>- FORTRAN</li> <li>- Pascal</li> <li>- PL/1</li> </ul>	<b>Data Analysis Software</b> <ul style="list-style-type: none"> <li>- Orion (Time Series Analysis)</li> <li>- Tactics (Statistical Analysis)</li> </ul>
<b>Data Management Software</b> <ul style="list-style-type: none"> <li>- Questor</li> <li>- Datman</li> </ul>	<b>Telecommunications Industry (4.1.1)</b> <ul style="list-style-type: none"> <li>- Dial Assignment (MIDAS) <ul style="list-style-type: none"> <li>Customer Use Reports</li> <li>Dynamic Load Balance</li> <li>Equipment Balance Information</li> </ul> </li> <li>- MAP (Mainframe Administration Program)</li> <li>- MAST (Digital Switch, Conversion and Translation)</li> </ul>
<b>Decision Support System (System W)</b> <ul style="list-style-type: none"> <li>- Financial Analysis</li> <li>- Investments</li> <li>- Statistics</li> <li>- Financial Consolidation and Reporting</li> <li>- Compliance Reporting</li> <li>- Budgeting</li> <li>- New Product Introduction</li> </ul>	

Professional services provided by Comshare are focused on large-scale projects in application design and development, project management, custom programming, distributed system design and implementation, and information center planning, using Comshare's software products.

- Comshare operates training centers in five countries and currently offers approximately 900 courses per year.

### Industry Markets

Comshare clients are primarily medium-to-large industrial corporations that purchase the company's decision support, executive reporting, and human resource management products and services. Other key clients include accounting firms, banks, telephone companies, and foreign governments.

### Geographic Markets

A three-year geographic source of revenue summary follows:

**COMSHARE, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
**(\$ millions)**

	FISCAL YEAR					
	6/89		6/88		6/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$47.3	54%	\$41.3	52%	\$37.8	54%
International	40.8	46%	37.6	48%	32.4	46%
<b>TOTAL</b>	<b>\$88.1</b>	<b>100%</b>	<b>\$78.9</b>	<b>100%</b>	<b>\$70.2</b>	<b>100%</b>

U.S. offices are located in Ann Arbor, Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, San Diego, San Francisco, St. Louis, and Washington, D.C.

COMSHARE Limited, Comshare's Canadian subsidiary, is headquartered in Etobicoke (Toronto). Other Canadian offices are located in Calgary, Montreal, Ottawa, and Vancouver.

Comshare International, BV, Comshare's European subsidiary, is

headquartered in London. Other offices are located in Belgium, France, Germany, and the Netherlands.

Independent agents and licensees are located in Australia, Finland, Hong Kong, Ireland, Israel, Italy, Japan, Norway, the Philippines, Singapore, Spain, Sweden, and Switzerland.

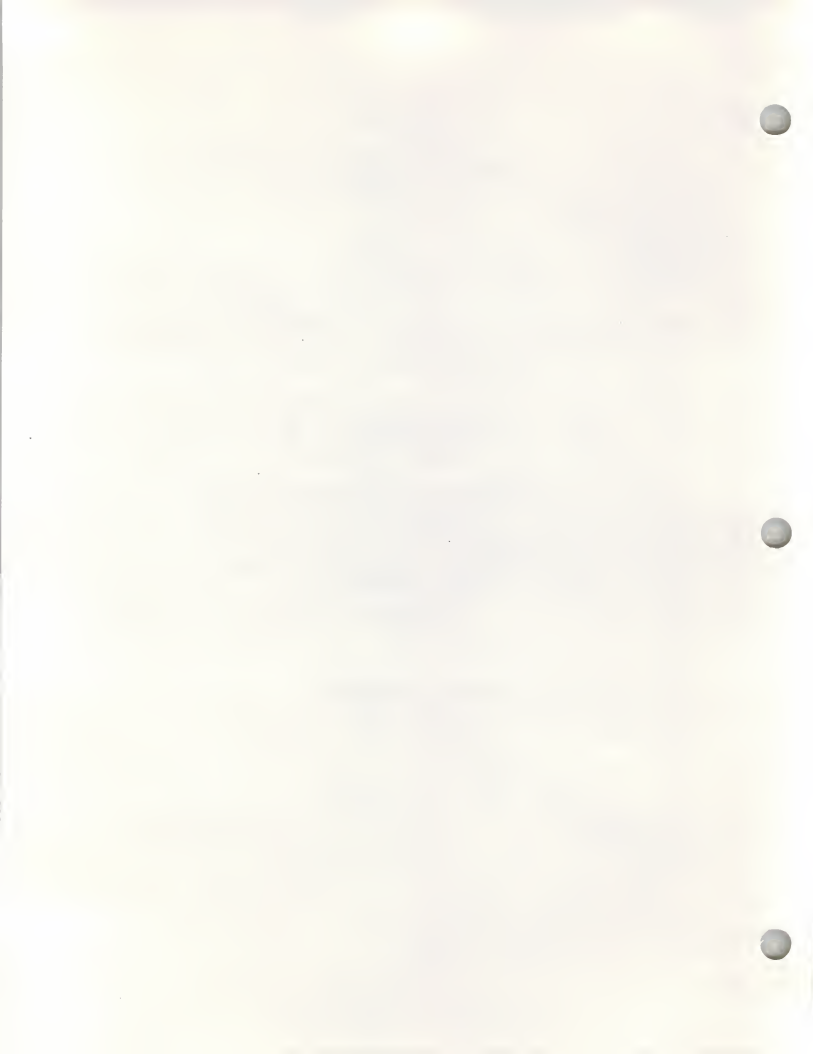
### **Computer Hardware and Software**

Comshare operates a private international telecommunications network that connects its data centers to more than 85 cities throughout the U.S., Europe, and Canada. The network consists of leased telephone circuits controlled by a proprietary, minicomputer-based, hardware/software system called the Telegrid Communications Network. Telegrid employs Comshare-designed technology to detect and correct errors in transmission.

Clients dial a local telephone number from any Telegrid city to reach one of Comshare's data centers. Clients who cannot reach a Telegrid city by a local telephone call may access the network via the Telenet (U.S. Sprint) network.

Equipment and location of the two data centers used for Comshare's network services are as follows:

- Ann Arbor:
  - 15 Sigma 9s, Commander II
  - 2 IBM 3081s, VM/CMS; MVS/TSO
- London:
  - 10 Sigma 9s, Commander II
  - 1 IBM 4381



## COMPANY PROFILE

---

**COMSHARE, INC.**  
3001 South State Street  
Ann Arbor, MI 48108  
(313) 994-4800

Richard L. Crandall, President and CEO  
Public Corporation, OTC  
Total Employees: 886  
Total Revenue, Fiscal Year End  
6/30/87: \$70,183,000

---

### The Company

Comshare, Inc. provides remote computing processing services, application software products, and professional services to more than 3,200 clients worldwide. The company's major products include System W<sup>R</sup> for decision support and management accounting applications, Commander<sup>TM</sup> Executive Information Systems (Commander EIS) for executive reporting, and Profiles<sup>TM</sup> for human resources information management. Comshare also offers certain industry-specific products and services to the telephone, retail, and petroleum industries.

- Founded in 1966, Comshare was one of the earliest companies to offer generalized commercial timesharing (processing) services.
- During the 1980s the company began focusing its efforts on serving the decision support and executive information markets and reoriented its business strategy to offer its proprietary software for use on in-house mainframes and microcomputers, as well as through its traditional processing services.
- Revenues from processing services have continued to represent a declining percentage of total revenue since 1982. During fiscal 1987, for the first time in the history of the company, software products and professional services contributed more than half (56%) of total revenue.

Fiscal 1987 revenue reached \$70.2 million, a 2% increase over revenue of \$68.9 million for fiscal 1986. Net income rose 65%, from \$1.3 million in fiscal 1986 to \$2.2 million in fiscal 1987. A five-year financial summary follows:

**COMSHARE, INC.**  
**FIVE-YEAR FINANCIAL SUMMARY**  
**(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	6/87	6/86	6/85(a)	6/84	6/83
Revenue	\$70,183	\$68,872	\$62,032	\$65,977	\$68,669
• Percent increase (decrease) from previous year	2%	11%	(6%)	(4%)	(1%)
Income (loss) before taxes	\$3,703	\$2,389	\$(178)	\$2,607	\$3,179
• Percent increase (decrease) from previous year	55%	*	(107%)	(18%)	153%
Net income (loss)	\$2,208	\$1,342	\$(379)	\$1,525	\$1,698
• Percent increase (decrease) from previous year	65%	454%	(125%)	(10%)	223%
Earnings (loss) per share	\$0.79	\$0.48	\$(0.11)	\$0.37	\$0.39
• Percent increase (decrease) from previous year	65%	536%	(130%)	(5%)	225%

\* Percent change exceeds 1,000%.

- (a) Fiscal 1985 results include a \$3.6 million (net of a \$3 million income tax benefit) provision associated with estimated losses in connection with the disposition of Computer Research Company, a Comshare subsidiary that provided general-purpose processing services, and a \$460,400 expense associated with the equity losses of a 37.3%-owned affiliate, COMSHARE Limited.

Comshare management attributes the revenue growth in fiscal 1987 to a 35% increase in software and professional services revenue, which offset a 20.5% decline in processing services revenue.

- The growth in software sales was generated from the recent introduction of Commander EIS, along with continued sales of the System W Decision Support System.
- Microcomputer software sales contributed approximately \$5 million (7%) to fiscal 1987 revenue, compared to \$3 million (4% of revenue) in fiscal 1986.
- Software sales have also increased the demand for professional services.

Research and development costs are charged to operations as incurred. Amounts charged to expense were approximately \$3.1 million, \$3.6 million, and \$6.4 million for fiscal 1987, 1986, and 1985, respectively. An additional \$4.8 million and \$4.3 million in software development costs were capitalized in fiscal 1987 and 1986, respectively.

Revenue for the six months ending December 31, 1987 reached \$39 million, a 14% increase over \$34.2 million for the same period in 1986. Net income was \$485,100, compared to net income of \$1.2 million for the same period a year ago.

- Net income for the quarter ending December 31, 1987 reached \$1.4 million, compared to \$656,000 for the same period a year ago. Results were attributed to record-breaking sales of the company's Commander EIS software product.
- Losses of \$946,000 for the quarter ending September 30, 1987 were attributed to lower than expected performance in European processing revenue (which was not countered by growth in European software sales), and a traditionally poor summer quarter.

Major competitors, by product/service area, include the following:

- Decision support: Thorn-EMI, Travelers/Diebold Technology Company, Information Resources, and IBM.
- Processing services: IBM, General Electric Information Services Company, Control Data, Boeing Computer Services, and McDonnell Douglas Information Systems Group.

#### **Key Products and Services**

A three-year summary of source of revenue, as provided by Comshare, follows:

**COMSHARE, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	6/87		6/86		6/85	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products and professional services	\$39.2	55.9%	\$29.0	42.1%	\$19.1	30.9%
Processing services	29.9	42.6%	37.6	54.6%	42.0	67.7%
Other	1.1	1.5%	2.3	3.3%	0.9	1.4%
<b>TOTAL</b>	<b>\$70.2</b>	<b>100.0%</b>	<b>\$68.9</b>	<b>100.0%</b>	<b>\$62.0</b>	<b>100.0%</b>

Comshare's products and services primarily target three application areas: decision support and management accounting, executive reporting, and human resource management. The following products are available to clients for in-house installation or as a processing service.

- System W, introduced in 1983, is a decision support system that integrates the mainframe and microcomputer for modeling, forecasting, statistical analysis, and reporting. Built-in data management, graphics, communications, and interfaces for data acquisition are also provided.
- System W components include:
  - Modeling, Comshare's initial decision support offering, provides modeling, investigative analysis (including goal seeking), and customized formal reporting.
  - Datman™, for relational data base management.
  - SQL Pipeline, a dynamic link to SQL/DS data.
  - File Power™, a data acquisition module.
  - Builders Pack, for application customizing and packaging.
  - Forecasting, for multidimensional statistical forecasting.

- Graphics, for color business graphics.
- Workstation Manager, for document distribution and administration.
- Communications, a mainframe communications module for data transmission between a microcomputer and mainframe.
- Information Gateway, a workstation environment for microcomputers with an integrated communications language.
- Personal W, for mainframe-compatible, three-dimensional modeling on a microcomputer.
- Management Accounting Workstation, introduced in 1988, provides a graphic-style interface for distributed budgeting and financial consolidation applications.
- System W is primarily designed for IBM and compatible mainframes running VM/CMS or MVS/TSO and DEC systems running under VMS. Microcomputer components run on the IBM PC/AT, Compaq DESKPRO 386, and compatibles.
- System W pricing ranges from \$86,500 to \$299,000 for IBM mainframes and \$43,500 to \$150,500 for DEC systems.
- There are currently over 350 System W client sites worldwide.
- Commander EIS, introduced in 1985, is a family of mainframe and microcomputer software products that assist the non-technical top level business executive in the automation of information access, integration, analysis, reporting, and delivery. It places emphasis on reporting internal performance critical success factors and the reduction of large volumes of operational data into electronic reports and charts.
- Comshare's Commander Executive, Workstation Manager, and Information Integration technologies formed the basis of Commander EIS.
- The products summarize and analyze a range of otherwise incompatible data sources, such as information from general ledgers, data base managers, public data bases, or Comshare's System W software.

- Commander Executive Workstation software offers Commander EIS users the following capabilities via a microcomputer:
  - The PC can always have downloaded mainframe-produced reports and charts available for instant viewing.
  - Updated reports are batched during off-peak hours and downloaded automatically to the PC.
  - Applications can provide for end user mainframe access to Dow Jones Information/Retrieval or other public data base information.
  - Application developer tools include screen handling for menu building, a full communications language, and various predefined PC functions.
- Workstation Manager manages the information flow between the microcomputer and mainframe or departmental computer.
- Information Integration components include:
  - Datman, a relational data manager for merging and consolidating data from payroll systems, general ledgers, and other data structures.
  - File Power, an extract utility to access and interpret data from multiple incompatible sources, including a variety of standard extract file formats, and finished report output.
  - Optional Information Pipelines are transparent connections to data sources such as IBM's SQL/DS, DB2, IMS, VSAM, Cullinet's IDMS, and Pansophic's EASYTRIEVE PLUS.
- Commander Builder provides tools for customizing and automating applications.
- Commander EIS Execu-View™ is a windowing capability that provides an interface to Comshare's System W modeling data base.
- Commander EIS runs on IBM 43XX or larger computers running under VM/CMS or MVS/TSO, and DEC VAX-11/750 or larger systems running under VMS. Commander

Executive Workstation software runs on IBM PC/AT, IBM Personal System/2, Compaq DESKPRO 386, and compatible computers.

- Commander EIS for IBM mainframes ranges in price from \$58,500 to \$180,000 (\$77,500 to \$278,000 with Execu-View), depending on the size of the machine, and includes 10 copies of workstation software.
- Commander EIS for DEC computers ranges from \$31,100 to \$80,300, depending on the size of the machine, and comes with five copies of workstation software.
- Information Gateway Plus, introduced in 1987, is a combination of mainframe and microcomputer software for packaging and delivering distributed applications and integrating mainframes, departmental computers, and PC workstations.
  - The Information Gateway Plus package consists, on the microcomputer side, of the Information Gateway, and on the mainframe side, of the Workstation Manager and the optional Information Integrator.
  - The Information Gateway packages the microcomputer environment and provides easy, controlled access to mainframe activities for end users. It provides application developers a set of packaging tools, including menu building, communications, and document management. These tools are used to integrate workstations into the corporate computing system.
  - The Workstation Manager manages the information flow between the microcomputer and mainframe or departmental computer.
  - The Information Integrator is a set of tools for bringing together data from many different sources with one common user interface.
- Information Gateway Plus mainframe software is compatible with IBM VM/CMS, MVS/TSO, and DEC VAX/VMS operating systems. Information Gateway, the microcomputer component, requires an IBM PC/XT, PC/AT, Personal System/2, PC 3270, or compatible.
- Pricing ranges from \$11,250 to \$64,000.

- The Profiles product line provides human resources information management via a microcomputer, minicomputer, or processing services.
  - Profiles/PC, introduced in 1984, is a microcomputer-based personnel recordkeeping and reporting system. Application tracking and job evaluation features are also available.
    - Profiles/PC runs on IBM and compatible microcomputers and is priced from \$7,200.
    - In addition to serving as a standalone system, it can be linked to Comshare's processing service for consolidation and analysis of data from multiple locations.
    - There are currently over 600 installations of Profiles/PC.
    - Comshare is developing a human resources workstation, Profiles/PC Plus, for management reporting applications.
  - Profiles/3000 is a human resources management software package designed for HP 3000 minicomputers that provides personnel recordkeeping and reporting. Priced at \$25,500, there are currently over 125 Profiles/3000 installations.
  - The Application Library is a processing service that provides salary administration, human resource planning, EEO compliance, and general administration.

Comshare offers large scale processing services from data centers in Ann Arbor (MI), London, and Toronto.

- A profile of the key applications offered on Comshare's network is presented in the exhibit.
- Major products offered on Comshare's network are summarized as follows:
  - System W decision support system.
  - Profiles human resource management system.
  - Questor, Comshare's data base management system.
  - Telecommunications services (also known as 4.1.1) is an integrated system for telephone companies that controls administrative activities such as telephone number

## EXHIBIT

COMSHARE, INC.  
KEY NETWORK APPLICATIONS

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<b>Operating Environment</b> <ul style="list-style-type: none"> <li>- 5 IBM 4381s, VM/CMS, MVS/TSO</li> <li>- 49 Sigma 9s, Commander II</li> </ul> <b>Programming Languages Supported</b> <ul style="list-style-type: none"> <li>- BASIC</li> <li>- COBOL</li> <li>- Fortran</li> <li>- Pascal</li> <li>- PL/1</li> </ul> <b>Data Management Software</b> <ul style="list-style-type: none"> <li>- Questor</li> <li>- Datman</li> </ul> <b>Data Bases Available</b> <ul style="list-style-type: none"> <li>- SuperSITE</li> <li>- EdVENT</li> </ul> <b>Decision Support System (System W)</b> <ul style="list-style-type: none"> <li>- Financial Analysis</li> <li>- Investments</li> <li>- Statistics</li> <li>- Financial Consolidation and Reporting</li> <li>- Compliance Reporting</li> <li>- Budgeting</li> <li>- New Product Introduction</li> </ul>	<b>Human Resource Management (Profiles)</b> <ul style="list-style-type: none"> <li>- EEO Reporting</li> <li>- Labor Relations</li> <li>- Employee Benefits</li> <li>- Compensation</li> <li>- Salary Administration</li> <li>- Retirement Planning</li> <li>- Skills Inventory</li> </ul> <b>Data Analysis Software</b> <ul style="list-style-type: none"> <li>- Orion (Time Series Analysis)</li> <li>- Tactics (Statistical Analysis)</li> </ul> <b>Telecommunications Industry (4.1.1)</b> <ul style="list-style-type: none"> <li>- Dial Assignment (MIDAS) <ul style="list-style-type: none"> <li>Customer Use Reports</li> <li>Dynamic Load Balance</li> <li>Equipment Balance Information</li> </ul> </li> <li>- MAP (Mainframe Administration Program)</li> <li>- MAST (Digital Switch, Conversion and Translation)</li> </ul>

assignment and voice traffic load balancing. The deregulation of AT&T has opened additional markets in selling the product to independent telephone companies and in selling System W to new operating companies for their analytical work.

Other industry-specific products and services offered by Comshare include the following:

- Retrivue is a telephone directory assistance turnkey system that operates on Data General minicomputers. Retrivue gives a telephone operator immediate access to all telephone listings.
  - Applications available include directory assistance, intercept, and dial assistance charging.
  - Retrivue pricing, including hardware and software, starts at \$60,000.
- Arthur, introduced in 1987, is a software product for IBM computers that provides inventory distribution and planning modeling for retailers.
- PETROFISK is a financial and tax planning model for the petroleum industry that is marketed outside the U.S.

Professional services provided by Comshare are focused on large-scale projects in application design and development, project management, custom programming, distributed system design and implementation, and information center planning, using Comshare's software products.

Comshare's European operations, contributing 46% to total fiscal 1987 revenue, primarily stems from the U.K.

- The European subsidiary, known as Comshare International, BV (CIBV), markets software products in Europe, provides professional services, and offers most of the U.S. network services applications. Current emphasis is on marketing System W in the banking, petroleum, and government sectors. The London data center also provides facilities management services for customers of its processing services.
- Effective July 1, 1985, Comshare acquired 100% ownership in COMSHARE Limited, A Canadian affiliate. Comshare has marketed its products and services in Canada exclusively through COMSHARE Limited since 1969 and prior to the acquisition had a 37% minority ownership.

**Industry Markets**

Comshare clients are primarily medium to large industrial corporations that purchase the company's decision support, executive reporting, and human resource management products and service. Other key clients include accounting firms, banks, telephone companies, and foreign governments.

**Geographic Markets**

A three-year geographic source of revenue summary follows:

**COMSHARE, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	6/87		6/86		6/85	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$37.8	54%	\$39.9	58%	\$40.0	65%
Europe	32.4	46%	28.9	42%	22.0	35%
<b>TOTAL*</b>	<b>\$70.2</b>	<b>100%</b>	<b>\$68.8</b>	<b>100%</b>	<b>\$62.0</b>	<b>100%</b>

\* Includes revenue between geographic areas of approximately \$3.1 million, \$6 million, and \$3.1 million for fiscal 1987, 1986, and 1985, respectively.

U.S. offices are located in Ann Arbor, Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, San Diego, San Francisco, and Washington, D.C.

COMSHARE Limited, Comshare's Canadian subsidiary, is headquartered in Toronto.

Comshare International, BV, Comshare's European subsidiary, is headquartered in London. Other offices are located in Belgium, France, Germany, and The Netherlands.

Independent agents and licensees are located in Australia, Denmark, Finland, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Norway, Singapore, Spain, Sweden, and Switzerland.

**Computer  
Hardware and  
Software**

Comshare operates a private international telecommunications network that connects its data centers to more than 85 cities throughout the U.S., Europe, and Canada. The network consists of leased telephone circuits controlled by a proprietary, minicomputer-based, hardware/software system called the Telegrid Communications Network. Telegrid employs Comshare-designed technology to detect and correct errors in transmission.

Clients dial a local telephone number from any Telegrid city to reach one of Comshare's three data center. Clients who cannot reach a Telegrid city by a local telephone call may access the network via the Telenet (U.S. Sprint) network.

Equipment and location of the three data centers used for Comshare's network services are as follows:

- Ann Arbor.
  - 26 Sigma 9s, Commander II.
  - 2 IBM 4381s, VM/CMS; MVS/TSO.
- London.
  - 18 Sigma 9s, Commander II
  - 1 IBM 4381.
- Toronto.
  - 5 Sigma 8 and 9s.

# FINANCIAL UPDATE TO HIGHLIGHT DATED MARCH 1984

COMSHARE, INC.  
3001 South State Street  
Ann Arbor, MI 48104  
(313) 994-4800

Richard L. Crandall, President  
Public Corporation, OTC  
Total Employees: 956  
Total Revenue, Fiscal Year End  
6/30/84: \$73,007,600

## COMSHARE, INC. FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	6/84	6/83	6/82	6/81	6/80
Revenue from continuing operations	\$ 73,008	\$ 76,337	\$ 78,453	\$ 79,837	\$ 68,579
. Percent increase (decrease) from previous year	(4%)	(3%)	(2%)	16%	49%
Income from continuing operations before taxes and extraordinary item	\$ 1,800	\$ 2,453	\$ 1,406	\$ 8,163	\$ 10,672
. Percent increase (decrease) from previous year	(27%)	74%	(83%)	(24%)	29%
Income before taxes	\$ 2,147	\$ 2,458	\$ 1,591	\$ 7,535	\$ 9,146
. Percent increase (decrease) from previous year	(13%)	54%	(79%)	(18%)	19%
Net income	\$ 1,390	\$ 2,209	\$ 56	\$ 1,487	\$ 4,055
. Percent increase (decrease) from previous year	(37%)	3,845%	(96%)	(63%)	(10%)
Income per share:					
- Continuing operations	\$ 0.34	\$ 0.31	\$ 0.18	\$ 1.03	\$ 1.41
. Percent increase (decrease) from previous year	10%	72%	(83%)	(27%)	8%
- Net income	\$ 0.34	\$ 0.51	\$ 0.01	\$ 0.35	\$ 1.07
. Percent increase (decrease) from previous year	(33%)	5,000%	(97%)	(67%)	(21%)

SOURCE OF REVENUE

- A three-year summary of source of revenue, as provided by Comshare, follows:

	<u>6/84</u>	<u>6/83</u>	<u>6/82</u>
Processing services	77.2%	81.7%	87.7%
Software products	13.1	4.7	1.6
Professional services	7.2	6.6	2.0
Other	<u>2.5</u>	<u>7.0</u>	<u>8.7</u>
	100.0%	100.0%	100.0%

## COMPANY HIGHLIGHT

COMSHARE, INC.  
3001 South State Street  
Ann Arbor, MI 48104  
(313) 994-4800

Richard L. Crandall, President  
Public Corporation, OTC  
Total Employees: 1,084  
Total Revenue, Fiscal Year End  
6/30/83: \$76,337,000

---

### THE COMPANY

- Founded in 1966, Comshare was one of the earliest companies to offer commercial timesharing services. Processing services is still a major business although Comshare has enacted a new decision support system (DSS) strategy in the past year. In January 1984 this strategy received a significant boost when the company announced a complementary marketing agreement with IBM whereby the two companies will work together to meet marketing requirements for DSS.
- Comshare continues to specialize in several markets for remote computing services, namely telephone traffic administration, human resources administration, and data base management systems. Future growth and new markets for the company will be in sales and development of decision support software products for IBM mainframes and microcomputers, consulting and professional services to users of IBM mainframes, and expansion of its DSS products on the network.
- Fiscal 1983 revenue was \$76.3 million, a decline of 3% from fiscal 1982 revenue of \$78.5 million. As shown in the financial chart, fiscal 1983 profits increased considerably over the prior year, but are still below levels achieved in previous years. Revenue and profit declines for the last year are attributed to:
  - Declining sales in remote computing services due to the economic recession and the impact of personal computers.
  - Increases in R&D expenditures to fund new software product development.
  - Impact of the strong U.S. dollar in Europe, where one-third of Comshare's revenue is derived, and the weakening of foreign revenue currencies.
- Despite its poor earnings performance during the last three years, Comshare's balance sheet has actually improved. Long-term debt as a percent of equity was 5% at June 30, 1983, compared with 26% in 1982 and 21% in 1981. The lower debt-to-equity ratio reflects a prepayment of \$6 million of long-term debt.

COMSHARE  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	6/83	6/82	6/81*	6/80*	6/79*
Revenue from continuing operations	\$ 76,337	\$ 78,453	\$ 79,837	\$ 68,579	\$ 46,049
• Percent increase (decrease) from previous year	(3%)	(2%)	16%	49%	97%
Income from continuing operations before taxes and extraordinary item	\$ 2,453	\$ 1,406	\$ 8,163	\$ 10,672	\$ 8,292
• Percent increase (decrease) from previous year	74%	(83%)	(24%)	29%	119%
Income before taxes	\$ 2,458	\$ 1,591	\$ 7,535	\$ 9,146	\$ 7,711
• Percent increase (decrease) from previous year	54%	(79%)	(18%)	19%	95%
Net income	\$ 2,209	\$ 56	\$ 1,487	\$ 4,055	\$ 4,521
• Percent increase (decrease) from previous year	3,928%	(96%)	(63%)	(10%)	33%
Income per share:					
- Continuing operations	\$ 0.31	\$ 0.18	\$ 1.03	\$ 1.41	\$ 1.31
• Percent increase (decrease) from previous year	72%	(83%)	(27%)	8%	31%
- Net income	\$ 0.51	\$ 0.01	\$ 0.35	\$ 1.07	\$ 1.36
• Percent increase (decrease) from previous year	5,000%	(97%)	(67%)	(21%)	7%

\* All financial information for fiscal years 1981, 1980, and 1979 was retroactively restated, where appropriate, for the disposal of several business operations and for an accounting change for vacation pay benefits adopted in fiscal 1981.

- In order to fully concentrate on its business strategy to become a leading supplier of software and services for DSS, Comshare sold several operations that were either unprofitable or did not fit its current operations strategy.

Discontinued operations at fiscal year end 1983 include the sale of Comshare's fiduciary income tax processing business, operations of Trust Management Systems, and the sale of its individual income tax processing operation. Revenue from discontinued operations were \$2.97 million and \$5.30 million for the years ended June 30, 1982, and June 30, 1981, respectively. Operating losses, net of related tax benefits, were \$752,800 and \$798,200 for the same period. Acquirors of the business units were:

- Automatic Data Processing purchased the individual income tax processing services in June 1982.
- Fiduciary income tax services were sold in June 1982 to Robert Nolan in St. Louis.
- Trust Management Systems Inc., a wholly owned subsidiary that marketed a line of minicomputer-based accounting systems (Digitrust, Digithrift, Digipay, and Digifile) used by bank trust departments, was sold to a former employee in North Carolina in March 1983.
- After the close of its 1983 fiscal year, Comshare sold its employee benefits product line and related assets (a trust accounting software product) to a former employee.
- For the six months ended December 31, 1983, Comshare reported revenue of \$36.2 million, down about 6% from the previous year's revenue of \$38.7 million. Net income was \$499,000, a 33% improvement over the \$374,000 reported in the prior year. Earnings per share were \$0.12 versus \$0.09 in the corresponding period. The decline in revenue for the six month period was attributed to two factors:
  - Loss of \$900,000 in revenue in the second quarter due to the employee benefit trust product sold in September 1983.
  - A loss of \$800,000 in foreign currency translation due to the continuing strength of the U.S. dollar overseas.
- Over the past five years Comshare has invested almost \$26 million in research for development of new products. Expenditures in fiscal 1983 and 1982 were about equal at \$6.1 million each year. Comshare plans to spend over \$15 million in the next few years for development and marketing of DSS.
- European operations continue to provide a substantial portion of Comshare's total revenue, although there has been some softening in the revenue base and declining profits. U.S. and European results for the last two years were:

COMSHARE, INC.

	FY 1983		FY 1982	
	<u>U.S.</u>	<u>Europe</u>	<u>U.S.</u>	<u>Europe</u>
Revenue	\$ 49,466	\$ 26,871	\$ 50,613	\$ 27,840
• Percent of total	65%	35%	65%	35%
Operating income*	\$ 3,160	\$ 858	\$ 2,303	\$ 1,120
• Percent of total	79%	21%	67%	33%

\*Operating income: before corporate charges, eliminations, and taxes.

- Comshare has not made any acquisitions since acquiring Advanced Management Strategies (now called Comshare Target Software) in November 1981.
- Comshare is organized into U.S. and European operating groups. Major profit centers at each location are:
  - Decision Support Systems (DSS): responsible for marketing and developing Comshare's DSS product line.
  - Telecommunications: develops applications that address the needs of telephone companies, particularly in the area of network administration. Included in the organization are the 4.1.1 products.
  - Human Resource Management: provides application services for personnel administrators to control and report data associated with all aspects of personnel recordkeeping.
  - Professional Services: provides consulting and professional services to IBM users.
  - Comshare Target Software: markets and develops a line of microcomputer software products, primarily for IBM microcomputers.
- Additionally Comshare has two subsidiaries.
  - Comshare/CRC (formerly Computer Research Company): provides batch and remote batch processing services from a data center in Chicago.
  - Comshare International, BV (CIBV): a holding company for Comshare's operations in Europe.
- At the end of fiscal 1983, Comshare had 1,084 employees. Over 80 employees were transferred with the sale of the employee benefit trust product, bringing the current total to about 1,000.

- Major competition for Comshare's specialty services comes from:
  - Decision Support Systems: EXECUCOM, Management Decision Systems, and EPS.
  - Telephone Industry: MCAUTO and Computer Consoles, Inc.
  - Human Resources: Information Science and Management Science America.
  - Microcomputer software products: Lotus Development, Microsoft, VisiCorp, and Sorcim.

#### KEY PRODUCTS AND SERVICES

- Comshare's fiscal 1983 revenue is estimated by INPUT as follows:

	<u>Percent of Total</u>	<u>Revenue (\$ millions)</u>
Processing services	85%	\$65.1
Professional services	7	5.3
Software products	6	4.3
Other*	<u>2</u>	<u>1.6</u>
	100%	\$76.3

\*Special project work.

- In 1983 Comshare embarked upon a plan to diversify from its traditional timesharing business to becoming an industry leader in decision support systems (DSS). The strategy called for providing a transition for its timesharing clients to use DSS on its network service, sell it as a software product when it was necessary for a client to bring the product in-house for cost reasons, actively market it for in-house use, develop a professional staff of consultants to aid users in DSS system design and implementation, and develop submodules to run on microcomputers to sell as standalone software products or to be integrated with Comshare's network. The product, originally developed and now marketed in Europe as Wizard, is being marketed in the U.S. as System W. It is offered on Comshare's network service, marketed in several versions for IBM mainframes for in-house use, and sold as a software product (Micro W) for IBM microcomputers and several other personal computers.
  - System W is a completely integrated mainframe and micro product combining business reporting, modeling, forecasting, statistical analysis, spreadsheet work, data management, graphics, communications, and interfaces for data acquisition from external software products.

- In January 1984 Comshare achieved support for the acceptance of System W by signing an agreement with IBM (basically an endorsement) for complementary marketing of System W software and associated professional services. The agreement calls for IBM and Comshare field representatives to conduct sales calls together where a decision support system is desired by prospects. The primary market for System W is cases where an information center is being employed or where a company desires productivity software. In addition to sales calls, the agreement calls for:
  - IBM and Comshare to work together on future improvements of System W to support new, relevant hardware and operating software releases.
  - For Comshare to maintain a continuing commitment to enhance System W to be the best choice for decision support in conjunction with IBM products and for information centers.
  - For Comshare to assume full responsibility for providing System W and Micro W software, installation, and after-sale support to customers.
  - For Comshare to offer education and custom programming services for decision support applications.
- Comshare's struggle to enter a new marketplace (it had to face a hostile investor community because of several years of poor financial performance) now appears to be over.
- Processing services, contributing an estimated 85% or \$65.1 million in revenue in fiscal 1983, are derived from its DSS product, data base management software, and specialty applications for telecommunications and human resource management. Comshare believes its remote computing revenue base is close to stabilization. Although higher growth is expected from its software business, processing services will remain as an integral part of Comshare's business base and strategy. It will continue to seek growth from its high-value-added timesharing products.
  - A profile of the key applications offered on Comshare's network is presented in Exhibit A.
  - Major products offered on Comshare's network are summarized as follows:
    - Decision Support System (DSS), described previously as System W, is a series of products to support business professionals.
    - Questor, Comshare's data base management system, is one of the highest revenue producing products on the network.

## EXHIBIT A

COMSHARE  
KEY APPLICATIONS ON THE NETWORK

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"><li>● OPERATING ENVIRONMENT<ul style="list-style-type: none"><li>— 4 IBM 4341s, VM/CMS, MVS/TSO</li><li>— 2 AMDAHL 470 V/8s, MVS</li><li>— 48 XEROX SIGMA 9s, COMMANDER II</li><li>— 2 XEROX 940s, COMMANDER II</li></ul></li><li>● PROGRAMMING LANGUAGES SUPPORTED<ul style="list-style-type: none"><li>— BASIC</li><li>— COBOL</li><li>— FORTRAN</li></ul></li><li>● DATA MANAGEMENT SOFTWARE<ul style="list-style-type: none"><li>— QUESTOR</li><li>— REQUESTOR</li><li>— COMPOSIT 77</li></ul></li><li>● DATA BASES AVAILABLE<ul style="list-style-type: none"><li>— DORIS (DEMOGRAPHIC DATA)</li><li>— SITE II</li></ul></li><li>● DECISION SUPPORT SYSTEM (SYSTEM W)<ul style="list-style-type: none"><li>— FINANCIAL ANALYSIS</li><li>— INVESTMENTS</li><li>— STATISTICS</li><li>— FINANCIAL CONSOLIDATION AND REPORTING</li><li>— COMPLIANCE REPORTING</li><li>— BUDGETING</li><li>— NEW PRODUCT INTRODUCTION</li></ul></li></ul>	<ul style="list-style-type: none"><li>● HUMAN RESOURCE MANAGEMENT (PROFILES)<ul style="list-style-type: none"><li>— EEO REPORTING</li><li>— LABOR RELATIONS</li><li>— EMPLOYEE BENEFITS</li><li>— COMPENSATION</li><li>— SALARY ADMINISTRATION</li><li>— RETIREMENT PLANNING</li><li>— SKILLS INVENTORY</li><li>— WAGE/PRICE PROGRAM COMPLIANCE</li><li>— FORGE (HUMAN RESOURCE PLANNING)</li><li>— FISC-OL (MODELING SALARY BUDGETS)</li></ul></li><li>● DATA ANALYSIS SOFTWARE<ul style="list-style-type: none"><li>— TACTICS (STATISTICAL ANALYSIS)</li><li>— ORION (TIME SERIES ANALYSIS)</li></ul></li><li>● TELECOMMUNICATIONS INDUSTRY (4.1.1)<ul style="list-style-type: none"><li>— DIAL ASSIGNMENT (MIDAS) CUSTOMER USE REPORTS DYNAMIC LOAD BALANCE EQUIPMENT BALANCE INFORMATION (EBIS)</li><li>— MAP (MAINFRAME ADMINISTRATION PROGRAM)</li><li>— MAST (DIGITAL SWITCH, CONVERSION AND TRANSLATION)</li></ul></li></ul>

- Telecommunication services (also known as 4.1.1) is an integrated system for telephone companies that controls administrative activities such as telephone number assignment and voice traffic load balancing. The deregulation of AT&T has opened additional markets in selling the product to independent telephone companies and in selling System W to the new operating companies for their analytical work.
- Human Resource Management is designed for corporate personnel managers. Also known as Profiles, the system provides applications for the control and reporting of personnel records, salary administration, EEO, profit sharing, and employee benefits.
- New products added to the network are:
  - Demographic On-Line Information Retrieval System (DORIS) is an information file that allows users to selectively extract information from a data base of 30 million demographic and marketing data items originating with the U.S. Bureau of Census and other marketing forecast sources.
  - Fisc-ol, a computerized system for modeling and analyzing salary budgets, is designed to help human resource departments plan salary budgets.
- Comshare/CRC provides processing services from a data center in Chicago. It offers System W as MVS and other general purpose applications.
- Although relatively small in revenue contribution, Comshare does offer a turnkey product for the telecommunications industry.
  - The Retrивue telephone directory assistance system operates on Data General minicomputers. Retrивue gives a telephone operator immediate access to all telephone listings.
    - Applications available include directory assistance, intercept, and dial assistance charging.
    - Price of Retrивue, including hardware and software, starts at \$60,000.
- Software product sales, a new business area for Comshare, contributed an estimated 6% or \$4.3 million in revenue in fiscal 1983. Most of this revenue is derived from the DSS mainframe product line.
  - The major product offered is System W, a decision support system used for financial and strategic planning to investigate, analyze, model, forecast, and graphically display information residing on a corporate

computer data base. In addition to simulations of various scenarios, System W is used to gather and report on existing data residing within a company's corporate data bases. It is a flexible reporting tool whose features allow users to easily modify data as their company grows or changes.

- System W Distributed includes System W and the data communications and error-checking capabilities necessary to support Micro W, a version of the decision support system for the IBM PC and XT. Micro W is sold only with the mainframe version of System W as an integrated package to operate in a distributed environment.
- Microcomputer software products are marketed through Comshare Target Software. Most of the products are sold through OEM arrangements. Emphasis is placed on developing products for the IBM PC and include the following:
  - Micro W, the microcomputer version of Comshare's DSS system, System W. The product is only sold with the mainframe version and operates in a distributed environment.
  - TARGET® PlannerCalc™ is a spreadsheet system used for financial analysis and projections.
  - TARGET® Financial Modeling™ is intended for business professionals who require financial modeling and reporting capabilities. It can handle sophisticated types of financial analyses, including profit center profiles, subsidiary company analysis/projections, sales trend analysis, investment portfolio analysis, and project investment analysis.
  - TARGET® Image Maker™ is a graphics product for microcomputer use.
  - TARGET® Applications Library Volume 1: General Business™ is designed to work with TARGET Financial Modeling. It contains over 200 application models, giving users immediate solutions to common business problems. This includes loan and bond amortization, mortgage calculation, depreciation, break-even analysis, cash flow forecasting, acquisition appraisals, real estate analysis, and new product introduction.
  - TARGET® TASK is a project-scheduling and management system that integrates CP/M and PERT techniques. Users can plan project schedules according to completion date or budget factors.
- Profiles 3000 is a personnel data base software product that operates on a Hewlett-Packard 3000 and allows for recordkeeping and analysis

of human resources. The system has on-line access and inquiry capabilities. Profiles 3000 costs \$25,500.

- An overview of the software products marketed by Comshare, including prices and hardware requirements, is presented in Exhibit B.
- Professional services, estimated at 7% or \$5.3 million of Comshare's fiscal 1983 revenue, is derived from new application development work in connection with its processing services and from a newly formed group that will concentrate on supporting consulting services in conjunction with the DSS product line and in-house users of IBM equipment.
  - Services are focused on large-scale projects in application design and development, project management, custom programming, distributed system design and implementation, and information center planning.
- Approximately 2% (or \$1.6 million) of Comshare's 1983 revenue came from special project work for the government in the United Kingdom and laser printing services in both the U.S. and U.K.
- Comshare's European operations, contributing over one-third of its total revenue, primarily stems from the United Kingdom. The European subsidiary, known as Comshare International, BV (CIBV), markets software products in Europe, provides professional services, and offers most of the U.S. network services applications. Current emphasis is on marketing DSS in the banking, petroleum, and government sectors.

#### INDUSTRY MARKETS

- Comshare derives the majority of its revenue from cross-industry clients of its DSS, human resource management, and data base management system products. Other key industries served are the telephone industry, banking institutions, discrete manufacturing, insurance, and government sectors.

#### GEOGRAPHIC MARKETS

- Approximately 65% (\$49.5 million) of Comshare's fiscal 1983 revenue was derived from the U.S. and 35% (\$26.9 million) came from European operations.
- Comshare owns a minority interest in Comshare Ltd., headquartered in Toronto. Revenue from Canadian operations are not consolidated in Comshare's financial statement.

#### COMPUTER HARDWARE AND SOFTWARE

- Comshare operates a private international telecommunications network with connections to over 383 cities throughout the U.S., Europe, and Canada. Network services are also available in 29 other countries. The network consists of over 30,000 miles of leased telephone circuits controlled by a proprietary, minicomputer-based, hardware/software system called the Telegrid

## EXHIBIT B

## COMSHARE'S SOFTWARE PRODUCTS

PRODUCT NAME	DESCRIPTION	PRICE	HARDWARE REQUIREMENTS (Operating System)
<b><u>MAINFRAMES AND MINICOMPUTERS</u></b>			
System W	Decision Support System (DSS)	\$55,000 \$100,000+	IBM 4331 and up with 2 M-bytes, (VM/CMS, MVS/TSO)
System W Distributed	DSS with data Communications and error-checking capabilities	\$80,000	IBM 4331 and up with 2 M-bytes, (VM/CMS, MVS/TSO)
Profiles 3000	Personnel data base product for human resources recordkeeping and analysis	\$25,500	HP 3000
<b><u>MICROCOMPUTERS</u></b>			
Micro W	Micro version of DSS (sold only with the mainframe version)	5 copies included with System W; additional copies \$200 each.	IBM PC or XT (PC DOS)
TARGET® PlannerCalc™.	Spreadsheet	\$99	TRS-80 Model 2, Apple II, DEC DEC UT-180, and most machines that support CP/M-80
TARGET® Financial Modeling™.	Financial modeling	\$325	IBM PC or XT, DEC Rainbow, Tandy 2000, Wang PC, and most machines that support MS-DOS, CP/M-86, or CP/M-80
TARGET® Image Maker™.	Graphics production	\$175	Apple II
TARGET® Applications Library Volume 1: General Business™.	General business models	\$125	IBM PC or XT, DEC Rainbow, Tandy 2000, Wang PC, and most machines that support MS-DOS, CP/M-86, or CP/M-80.
TARGET®TASK	Project scheduling and manage- ment system	\$329	IBM PC, DEC Rainbow, most 8-bit machines with CP/M or 16-bit machines with CP/M-86 or PC DOS.

Communications Network. Telegrid employs Comshare-designed technology to detect and correct errors in transmission.

- The GTE Telenet network is used to augment its private telecommunications network service. Using Telenet, Comshare provides service to more than 325 cities in 31 countries.
- Equipment and location of the three data centers used for Comshare's network services are:
  - Ann Arbor.
    - 24 Xerox Sigma 9s, Commander II.
    - 2 IBM 4341s, VM/CMS; MVS/TSO.
    - 2 Xerox 940s, Commander II.
  - Chicago (Comshare/CRC Inc.)
    - 2 Amdahl 470 V/8s, MVS.
    - 1 IBM 4341.
  - London.
    - 24 Xerox Sigma 9s, Commander II.
    - 1 IBM 4341.

## COMPANY HIGHLIGHT

COMSHARE, INC.  
3001 South State Street  
Ann Arbor, MI 48106  
(313) 994-4800

Richard L. Crandall, President  
Public Corporation, OTC  
Total Employees: 1,215  
Total Revenue, Fiscal Year  
End 6/30/81: \$82,903,000

---

### THE COMPANY

- Comshare was founded in 1966 by six individuals previously associated with the University of Michigan, to offer commercial timesharing. The company has expanded its services to international markets and since the early 1970s, has specialized in providing remote computing services within five application areas: personnel administration, financial planning and analysis, certified public accounting, telephone company traffic administration, and trust administration.
- Comshare's revenue in fiscal 1981 was up 17% over fiscal 1980. Income before taxes and net income declined, resulting in pretax margins of 8.1% in 1981 versus 11.4% in 1980.

COMSHARE  
FIVE-YEAR FINANCIAL SUMMARY (RESTATED)  
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	6/81	6/80	6/79	6/78	6/77
Revenues from continuing operations	\$82,903	\$70,832	\$47,243	\$23,431	\$16,672
• Percent increase from previous year	17%	50%	102%	41%	21%
Income from continuing operations before taxes and extraordinary item	\$ 6,731	\$ 8,077	\$ 7,218	\$ 3,928	\$ 2,049
• Percent increase (decrease) from previous year	(17%)	12%	84%	92%	61%
Income from continuing operations	\$ 3,928	\$ 4,759	\$ 4,113	\$ 2,674	\$ 1,361
• Percent increase (decrease) from previous year	(17%)	16%	54%	96%	91%
Net income	\$ 1,487	\$ 4,055	\$ 4,521	\$ 3,399	\$ 2,002
• Percent increase (decrease) from previous year	(63%)	(10%)	33%	70%	72%
Income per share:					
- Continuing operations	\$ 0.92	\$ 1.26	\$ 1.23	\$ 1.00	\$ 0.59
• Percent increase (decrease) from previous year	(27%)	2%	23%	69%	74%
- Net income	\$ 0.35	\$ 1.07	\$ 1.36	\$ 1.27	\$ 0.86
• Percent increase (decrease) from previous year	(67%)	(21%)	7%	48%	54%

- All financial information was retroactively restated, where appropriate, for the disposal of the individual income tax processing services operations and for an accounting change for vacation pay benefits adopted in fiscal 1981. The accounting change increased net income by \$96,000, or two cents per share, in fiscal 1981.

# COMSHARE, INC.

- Comshare's income tax processing service operations were discontinued in February 1981 after incurring net operating losses of \$352,300. During the fourth quarter of fiscal 1981, the company sold the discontinued operations for \$1.7 million in cash and future contingency payments. The loss on disposal, net of tax benefits, was \$2,089,100.
- The results of 1981 include the first full year of operations of Comshare's January 1980 acquisition, Computer Research Company (CRC). FY 1980 results include the first full year of operation of CIBV, the Comshare International, BV fiscal 1979 acquisition, as well as CRC for the latter half of the year.
  - Excluding the effect of acquisitions, Comshare's revenue growth was 11% in fiscal 1981.
- Reduced profits from continuing operations in FY 1981 were due largely to lower than expected revenues and the decision to continue important development programs in research and marketing. Another contributing factor was the general economic climate in Comshare's two market areas, the U.S. and the United Kingdom.
  - Research and development costs were \$6.2, \$4.8 and \$3.4 million for the years ended June 30, 1981, 1980 and 1979, respectively.
- First quarter results from FY 1982 ended September 30, 1981, showed a minimal decrease (1%) in revenues from \$20,510,000 in 1980 to \$20,341,800 in 1981. Income from continuing operations for the quarter also declined (17%) from \$1,037,100 or \$0.27 per share in 1981 to \$857,500 or \$0.19 per share in 1982.
- In November 1981 Comshare announced the acquisition of the microcomputer software business of Advanced Management Strategies, Inc. of Atlanta, GA. The firm's products are sold under the trade name Target and the new unit will operate as a Comshare subsidiary, Target Software, Inc.
- Revenues and contribution to operating income from Comshare's European operations continued to be substantial. In fiscal 1981, European operations contributed approximately 39% of the company's revenue and 25% of its operating income, as illustrated below (\$ millions):

	FY 1981		FY 1980	
	U.S.	Europe	U.S.	Europe
Revenue	\$50.3	\$32.6	\$41.4	\$29.4
. Percent of total	61%	39%	59%	41%
Operating income	\$7.2	\$2.4	\$6.6	\$4.1
. Percent of total	75%	25%	62%	38%

## COMSHARE, INC.

- Comshare is divided into five separate profit centers, each with its own sales and marketing staff:
  - Communication Product Services: develops applications that address the needs of telephone companies, particularly in the area of network administration. Included in this organization are the 4.1.1 products.
  - Compass Services: provides specialty software and services for certified public accountants.
  - Human Resource Management: provides application services for personnel administrators to control and report data associated with all aspects of personnel recordkeeping.
  - Financial Planning and Control: markets financial modeling, analysis, forecasting and compliance reporting applications to financial departments in medium to large firms.
  - Trust Services: provides employee benefit plans recordkeeping, personal trust administration, and related payment services to bank trust departments.
- Two other organizational units were established in 1980.
  - Hardware Division: markets several proprietary peripheral devices for Xerox Sigma Computers, which were originally developed for internal use.
  - Computer Graphics: responsible for developing new applications in computer graphics, specifically a new graphics product, Execuchart.
- Additionally, Comshare has three wholly owned subsidiaries: COMSHARE International, BV (CIBV), Computer Research Company, and the recently acquired Target Software, Inc.
- Competition for Comshare's specialty services comes from:
  - Telephone industry: McAUTO and Tymshare.
  - Trust services: SEI and Bradford National.
  - Personnel administration: Information Sciences and Management Science America.

## KEY PRODUCTS AND SERVICES

- Approximately 96% of Comshare's revenue is derived from processing services and 4% from turnkey systems sales.

- The majority of Comshare's processing revenues come from specialty applications available on Comshare's network or from several batch data centers. Specialty applications offered in the U.S. include:
  - Parsec, a group of products for financial modeling, inflation accounting, consolidated budgeting, and performance reporting.
  - 4.1.1, an integrated system for telephone companies, which controls administrative activities such as telephone number assignment and voice traffic load balancing.
  - Profiles, an information processing system for corporate personnel managers. Profiles provides applications for the control and reporting of personnel records, salary administration, EEO, profit sharing, and employee benefits.
  - Compass, a package of programs for assisting certified public accountants with auditing, and practice development services, as well as internal time, billing, and general ledger services.
  - Trust services, including applications to support trust administration, pension check preparation, and trust department operations.
- Revenues from Comshare's proprietary data base management system, Questor, and a related product, TACTICS, doubled within the last year. These products are estimated to contribute about 14% of Comshare's total revenue, or \$12 million.
- A profile of the key applications offered on Comshare's U.S. network is presented in the exhibit. Several new applications were introduced in fiscal year 1981.
  - Parsec.
    - Orion, a marketing analysis module.
    - New Product Introduction, for pre-release review of market variables.
    - Site II, for demographic information retrieval and reporting.
  - Compass.
    - Audimate, for auditors' review work via timesharing-based software.
- Turnkey systems, available in Comshare's specialty areas, account for about 4% of FY 1981.
  - Data General Nova minicomputers Models 3 and 4 and Eclipse 130s run the Retrieve telephone directory assistance system for 4.1.1. Retrieve gives a telephone operator immediate access to all telephone listings.

## EXHIBIT

## COMSHARE

## KEY APPLICATIONS ON THE U.S. NETWORK

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>● OPERATING ENVIRONMENT               <ul style="list-style-type: none"> <li>– XEROX 940, COMMANDER II</li> <li>– XEROX SIGMA 9, COMMANDER II</li> </ul> </li> <li>● DISTRIBUTED PROCESSING               <ul style="list-style-type: none"> <li>– DIGITRUST</li> <li>– RETRIVUE</li> </ul> </li> <li>● PROGRAMMING LANGUAGES SUPPORTED               <ul style="list-style-type: none"> <li>– BASIC</li> <li>– COBOL</li> <li>– FORTRAN</li> </ul> </li> <li>● DATA MANAGEMENT SOFTWARE               <ul style="list-style-type: none"> <li>– QUESTOR</li> <li>– REQUESTOR</li> <li>– COMPOSIT 77</li> </ul> </li> <li>● DATA BASES AVAILABLE               <ul style="list-style-type: none"> <li>– INTERNATIONAL MONETARY FUND</li> <li>– VALUE LINE</li> <li>– CITIBASE</li> <li>– VSCOM</li> <li>– PROFILES WORKFORCE CENSUS</li> <li>– SITE II</li> </ul> </li> <li>● FINANCIAL TOOLS               <ul style="list-style-type: none"> <li>– FCS (FINANCIAL MODELING)</li> <li>– TACTICS (TIME SERIES ANALYSIS)</li> <li>– DATAFORM III (FINANCIAL MODELING)</li> <li>– VSCOM - 33 (FORECASTING MODULE)</li> </ul> </li> <li>● FINANCIAL SERVICES (PARSEC)               <ul style="list-style-type: none"> <li>– AUDITING AND ACCOUNTING FUNCTIONS</li> <li>– FINANCIAL ANALYSIS</li> <li>– INVESTMENTS</li> <li>– STATISTICS</li> <li>– FINANCIAL CONSOLIDATION AND REPORTING</li> <li>– COMPLIANCE REPORTING</li> <li>– BUDGETING</li> <li>– ORION</li> <li>– NEW PRODUCT INTRODUCTION</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● HUMAN RESOURCE MANAGEMENT (PROFILES)               <ul style="list-style-type: none"> <li>– EEO REPORTING</li> <li>– LABOR RELATIONS</li> <li>– EMPLOYEE BENEFITS</li> <li>– COMPENSATION</li> <li>– SALARY ADMINISTRATION</li> <li>– RETIREMENT PLANNING</li> <li>– SKILLS INVENTORY</li> <li>– WAGE/PRICE PROGRAM COMPLIANCE</li> <li>– PRISM (HUMAN RESOURCE PLANNING)</li> </ul> </li> <li>● CERTIFIED PUBLIC ACCOUNTANTS (COMPASS)               <ul style="list-style-type: none"> <li>– ACCOUNTING</li> <li>– AUDITING</li> <li>– INVESTMENTS</li> <li>– PENSION PLAN ANALYSIS</li> <li>– TAX PLANNING AND PREPARATION</li> <li>– TIME AND BILLING</li> <li>– PROJECT ACCOUNTING</li> <li>– GENERAL LEDGER</li> <li>– AICPA/COMSHARE LIBRARY</li> <li>– VSCOM 33</li> <li>– REAL ESTATE ANALYSIS</li> <li>– ACCOUNTING PROJECTION</li> <li>– CASH FLOW</li> <li>– AUDIMATE</li> </ul> </li> <li>● TELEPHONE INDUSTRY (4.1.1)               <ul style="list-style-type: none"> <li>– DIAL ASSIGNMENT (MIDAS)</li> <li>– CUSTOMER USAGE REPORTS</li> <li>– DYNAMIC LOAD BALANCE</li> <li>– EQUIPMENT BALANCE INFORMATION (EBIS)</li> </ul> </li> <li>● TRUST ADMINISTRATION SERVICES*               <ul style="list-style-type: none"> <li>– PERSONAL TRUST (DIGITRUST, TRUSTOR II)</li> <li>– CORPORATE TRUST (AUTOPAY)</li> <li>– EMPLOYEE BENEFIT TRUST (TRILOG, TRASOP I, PENSION PAY)</li> <li>– FIDUCIARY TAX RETURNS (DIGITAX)</li> </ul> </li> </ul>

\* TRUST SERVICES ARE PROVIDED FROM A BATCH DATA CENTER IN PHILADELPHIA.

- Applications available include directory assistance, intercept, and dial assistance charging.
- Retrive costs between \$50,000 and \$350,000.
- The trust system, called Digitrust, is designed for use by medium-sized trust departments. Offered since 1976, Comshare currently has 35 systems installed. Price of a system ranges from \$40,000 to \$100,000 for the software license and hardware. Digitrust operates on DEC PDP/11s. Applications available on the minicomputer include:
  - Personal Trust Accounting.
  - Employee Benefit Participation Accounting.
  - Bond/Coupon Paying and Reconciliation.
- Digithrift is based on the DEC PDP 11/34 and costs \$65,000. The product was introduced in 1981.
  - Applications for Digithrift enable trust professionals to simplify recordkeeping, accounting, and administration for employee benefit plans.
- Digipay, while available as a turnkey system on DEC PDP 11s, is primarily sold as a software package. It automates the repetitive manual processing that characterizes bond and coupon payment and reconciliation. It features interactive data entry, systems for balancing and controlling accounts, and security measures.
  - Level I, costing \$35,000, is the basic automated bond payment system.
  - Level II costs \$50,000, and adds recordkeeping for registered bonds and historical cash history maintenance features.
  - Hardware for either level is available for \$33,000 additional.
- Digifile puts the wills of trust department clients on a computerized data base. Once they are automated, updating wills to reflect changes in trust assets is easier and more timely.
- Available for DEC PDP 11 equipment, the Digifile software costs \$12,000 installed.
- Profiles 3000 is a new personnel data base software product which operates on a Hewlett-Packard 3000 and allows for recordkeeping and analysis of human resources. The system has on-line access and inquiry capabilities. Profiles 3000 costs \$20,000.

- Comshare released its first software application in the microcomputer area in fiscal 1981. A series of software products for the bank trust industry was designed by the company's Trust Services Division.
  - Three products under the name Microshare are being marketed for employee benefit recordkeeping, and wills inventory and retention.
    - Specific applications include recordkeeping for profit sharing or employee stock ownership plans, and a lump sum check payment system for the payment of such items as dividends or interest.
    - Microshare products run on Apple II microcomputers. The systems range in price between \$3,700 (software) and \$9,600 (software and hardware).
- In February 1982, Comshare introduced a personal trust accounting system based on the Apple III microcomputer. Called Microtrust, the system is suitable for bank trust departments that handle between 40 and 400 personal trust accounts.
  - The system is designed to handle time-consuming trust department functions which include administrative procedures like daily reporting of account activity and investment-related tasks such as account statement preparations and customer reviews. The system speeds trust department operations such as the posting and generation of dividends and interest.
  - Two versions are currently available. The five megabyte hard disk system costs \$13,000, while the three megabyte floppy disk version costs \$10,000.
- Comshare is completing development of a color computer graphics family of products, Execuchart, that provide color computer graphics for use by executives and their staff. Execuchart is planned for release in fiscal 1982 after three years of development effort.
- Computer Research Company (CRC) provides batch and remote batch processing from a data center in Chicago. It does not offer any unique specialty applications and basically sells computer time at low rates on two Amdahl 470 V/8s.
- Much of Comshare's European business stems from government agencies in the United Kingdom. The company provides financial applications for various bureaus and departments. Comshare's European subsidiary, Comshare International, BV (CIBV), offers the following specialty applications in addition to Parsec:
  - Monita, a foreign exchange banking application that includes Femis, a foreign exchange accounting and management information system.

## COMSHARE, INC.

- Counsela, providing general problem-solving applications to government agencies.
- Visor, a stock and production control system for discrete manufacturing clients.
- A new financial modeling product, Wizard, was developed over the past three years in the United Kingdom and reached the market test stage last year. It will be released in Europe early in fiscal 1982. Comshare intends to release it in the U.S. before the end of the year.
- The newest Comshare subsidiary, Target Software Inc., offers three products for business planning for microcomputers called the Target Business Planning System.
  - Target Planner is a business planning tool for beginning business planners. It provides for cash flow analysis/projections, sales projections, budget planning, job costing, investment portfolio analysis, payback analysis, acquisition/merger analysis, tax calculations/projections, loan analysis, breakeven analysis, inventory control, and product line analysis.
    - It operates on most microcomputers including those from IBM, Xerox, NEC, Apple, DEC, Zenith, Vector, and Tandy. The package costs \$195.
  - Target Planner Calc allows for financial analysis and projections for personal financial planning and beginning financial planners, like Target Planner, except it uses gridsheet entry methods. The package also sells for \$195.
  - Target Master Planner costs \$495 and is intended for financial professionals who require a large, complex modeling capability. It enables sophisticated types of financial analyses including profit center profiles, subsidiary-company analysis/projections, sales trend analysis, investment portfolio analysis, and project investment analysis.

**INDUSTRY MARKETS** Comshare derives the majority of its revenues from CPA firms, the telephone industry, financial institutions, discrete manufacturing, insurance and government sectors. Comshare's largest clients are various subsidiaries of AT&T, which accounted for 4% of total revenues in 1981 (\$3.3 million) and 7% (\$4.7 million) in 1980.

**GEOGRAPHIC MARKETS** Approximately 61% of Comshare's 1981 revenues were derived from U.S. clients and 39% from European operations.

## COMPUTER HARDWARE

- Comshare operates a private, international telecommunications network, with connections to over 90 cities throughout the U.S., Europe, and Canada. The

network consists of over 25,000 miles of leased telephone circuits controlled by a proprietary, minicomputer-based, hardware/software system called the Telegrid Communications Network. Telegrid employs Comshare-designed technology to detect and correct errors in transmission.

- In 1981, Comshare augmented its private telecommunications network by connecting to the GTE Telenet network. Services are now available to more than 150 cities in 22 countries.
- COMMANDER II, Comshare's proprietary operating system, operates in interactive and remote batch modes. COMMANDER II-based services are offered from data centers in Ann Arbor and London. Comshare has licensing agreements for COMMANDER II in Tokyo (Japan Information Service, Ltd.) and Toronto (Comshare, Ltd.).
- Equipment installed in the two remote computing centers consists of:
  - Ann Arbor.
    - 19 Xerox Sigma 9s.
  - London.
    - 18 Xerox Sigma 9s.
- Comshare has upgraded a number of the Sigma 9 systems with new central processors and advanced MOS memory manufactured by Honeywell.
- Computer Research Company has two Amdahl 470V/8s installed in its data center in Chicago.
- Comshare's Trust Services Division operates a data center in Philadelphia and has an IBM 360/65 installed. All trust applications operate in a batch mode.

*Larry Eisen  
PR Dir.*

## COMPANY HIGHLIGHT

**COMSHARE, INC.**  
3001 South State Street  
Ann Arbor, MI 48106  
(313) 994-4800

Richard L. Crandall, President  
Public Corporation, OTC  
Total Employees: 1,282  
Total Revenues, Fiscal Year End  
6/30/80: \$78,207,900

### THE COMPANY

- Comshare was founded in 1966 by six individuals, previously associated with the University of Michigan, to offer commercial timesharing. The company has since expanded its services to international markets and, starting in 1972-1973, began specializing in providing RCS services within five application areas: personnel administration, financial planning and analysis, certified public accounting, telephone company traffic administration and trust administration.
- Comshare's FY 1980 revenues increased to \$78,207,900, up 48% from \$52,980,000 in FY 1979. Pretax profits, income before and after taxes, and earnings per share declined from previous years as shown in the following summary:

COMSHARE  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ Thousands, Except Per Share Data)  
(FYE 6/30)

FISCAL YEAR ITEM	1980	1979	1978	1977	1976
Revenues	\$78,208	\$52,980	\$25,639	\$18,213	\$13,578
• Percent increase from previous year	48%	107%	41%	32%	12%
Income before taxes and extraordinary item	\$ 6,973	\$ 7,730	\$ 3,757	\$ 2,266	\$ 1,291
• Percent increase (decrease) from previous year	(10%)	106%	66%	76%	(15%)
Net income	\$ 4,165	\$ 4,732 (A)	\$ 3,413 (A)	\$ 2,019 (A)	\$ 1,173 (B)
• Percent increase (decrease) from previous year	(12%)	39%	69%	72%	(22%)
Earning per share be- fore extraordinary credits	\$ 1.10	\$ 1.31	\$ 0.97	\$ 0.64	\$ 0.35
• Percent increase (decrease) from previous year	(15%)	35%	52%	83%	(5%)

COMPANY HIGHLIGHT/COMSHARE, INC.

- (A) Includes extraordinary credits for reduction of income taxes arising from deduction of prior years' accounting expenses for tax purposes in current and future years.
- (B) Includes extraordinary credit for reduction in income taxes resulting from carryforward of prior years' operating losses.
- Comshare's 1980 financials include the first full year of operation of CIBV (COMSHARE International, BV) and Digitax, and six months of results for Computer Research Company. These acquisitions account for some 68% of the total increase in revenue. Excluding the effect of acquisitions, revenue growth from other operations was 18% in 1980. Reduced profits and lower earnings were attributed to:
  - Increased expense costs due to the costs of acquired companies (CRC, Digitax, CIBV), while expense curtailment was only partially implemented.
  - Increased investment expenditures in new products and equipment, which will not yield profit returns until FY 1981.
  - An operating loss of approximately \$1 million from tax processing services.
  - Increased interest costs of an additional \$0.9 million, which was charged against earnings.
  - Pressures created by the economic recession.
- First quarter results from FY 1981, ended September 30, 1980, showed revenues of \$20,933,600, a 29% gain from \$16,259,700 for the same quarter a year ago. Net income for the quarter was \$803,000, or \$0.21 per share, reflecting a decline of 17% compared with \$968,000, or \$0.26 per share, a year ago.
- In December 1980, Comshare issued a public offering for the sale of 600,000 shares of common stock. Proceeds from the sale will be used to repay variable-rate debt and to provide working capital and an expanded equity base for product development and diversification, equipment purchases and future acquisitions.
- Revenues and contribution to operating income from Comshare's European operations increased significantly in FY 1980. This was due primarily to Comshare's acquiring the remaining 55% ownership of COMSHARE International, BV in FY 1979. European operations contributed 38% of Comshare's total revenues in 1980 and 41% of its operating income, illustrated as follows:

# COMPANY HIGHLIGHT/COMSHARE, INC.

ITEM \ FISCAL YEAR	FY 1980 (\$ Millions)		FY 1979 (\$ Millions)	
	U.S.	Europe	U.S.	Europe
Revenues	\$48.8	\$29.4	\$37.5	\$15.5
Percent of total	62%	38%	71%	29%
Operating income	\$ 5.7	\$ 4.1	\$ 6.7	\$ 2.6
Percent of total	59%	41%	70%	30%

- In January 1980, Comshare completed the acquisition of Computer Research Company (CRC), in Chicago. CRC was acquired for \$3.9 million cash and an agreement to make additional payments amounting to no more than \$1.25 million plus accrued interest, based upon the collectibility of accounts receivable acquired and the achievement of specified revenue levels for the years ending December 31, 1980 and 1981. CRC is a provider of IBM-based computer processing services and had annual revenues of about \$7 million at the time of acquisition.
- In July 1980, the French government approved Comshare's application to establish a wholly owned company in France to provide timesharing services. This is the first U.S. company to receive such approval. Comshare plans to establish a data center in Valbonne, France.
- During 1980, Comshare reorganized its specialty U.S. divisions into six separate profit centers, each with its own sales and marketing staff. These are:
  - Communication Product Services: develops applications that address the needs of telephone companies, particularly in the area of network administration. Included in this organization are the 4.1.1 products.
  - Compass Services: provides specialty software and services for certified public accountants.
  - Human Resource Management: provides application services for personnel administrators to control and report data associated with all aspects of personnel recordkeeping.
  - Tax Services: processes federal and state income tax return statements.
  - Financial Planning and Control: markets financial modeling, analysis, forecasting and compliance reporting applications to financial departments in medium to large firms.
  - Trust Services: provides employee benefit plans recordkeeping, personal trust administration and related payment services to bank trust departments.

## COMPANY HIGHLIGHT/COMSHARE, INC.

- Three new organizational units were also established in 1980.
  - Hardware Division: markets several proprietary peripheral devices for Xerox Sigma Computers, which were originally developed for internal use.
  - Production Computer Services: wholesales timesharing services to other computer services companies that serve market segments not covered by Comshare.
  - Computer Graphics: responsible for developing new applications in computer graphics.
- Other organizational units within Comshare are the two wholly owned subsidiaries COMSHARE International, BV (CIBV) and the Computer Research Company.
- Competition for Comshare's specialty services comes from:
  - Telephone industry: McAUTO and Tymshare.
  - Trust services: SEI and Bradford National.
  - Personnel administration: Information Sciences and Management Science America.
  - Tax services: CCH Computax, Tymshare and other regional firms.

## KEY PRODUCTS AND SERVICES

- Approximately 98% of Comshare's revenues are derived from processing services and 2% from minicomputer-based services.
- The majority of Comshare's processing revenues come from specialty applications available on the network or from several batch data centers. Specialty applications offered in the U.S. are:
  - Parsec, a group of products for financial modeling, inflation accounting, consolidated budgeting and performance reporting.
  - 4.1.1, an integrated system for telephone companies, which controls administrative activities such as telephone number assignment and voice traffic load balancing.
  - Profiles, an information processing system for corporate personnel managers. Profiles provides applications for the control and reporting of personnel records, salary administration, EEO, profit sharing and employee benefits.

## COMPANY HIGHLIGHT/COMSHARE, INC.

- Compass, a package of programs for assisting certified public accountants with auditing, tax processing and practice development services, as well as internal time, billing and general ledger services.
- Trust services, including applications to support trust administration, pension check preparation and trust department operations.
- Digitax, a tax preparation service for federal and state income tax returns.
- The major specialty applications marketed in Europe include Parsec and:
  - Monita, a foreign exchange banking application that includes Femis, a foreign exchange accounting and management information system.
  - Counsela, providing general problem-solving applications to government agencies.
  - Visor, a stock and production control system for discrete manufacturing clients.
- Revenues from Comshare's proprietary data base management system, Questor, and a related product, TACTICS, doubled within the last year. These products are estimated to contribute about 14% of Comshare's total revenue, or \$11 million.
- A profile of the key applications offered on Comshare's U.S. network is presented in Exhibit A. New applications introduced within the last year follow:
  - The first two volumes of the Personnel Applications Library were released for Profiles. Human Resource Planning and Salary Administration are available. A third volume, EEO Compliance, is scheduled for release in January 1981.
  - In Parsec, Planmaster was released for budgeting applications, and VSCOM-33, a financial reporting system, was extensively enhanced to meet the new FASB/33 ruling on corporate inflation reporting.
  - Comshare's application product for telephone companies, 4.1.1, was enhanced by the addition of MAST, a system to assist telephone companies in the conversion from mechanical switching systems to the new electronic digital exchanges.
  - Three new computer models were added to Compass: Real Estate Analysis, Accounting Projection and Cash Flow.
- In addition to processing services, Comshare markets minicomputer systems for trust services and its 4.1.1 product for telephone companies. Both products operate in conjunction with the network.

**EXHIBIT A**  
**COMSHARE**  
**KEY APPLICATIONS ON THE U.S. NETWORK**

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT                             <ul style="list-style-type: none"> <li>– XEROX 940, COMMANDER II</li> <li>– XEROX SIGMA 9, COMMANDER II</li> </ul> </li> <li>• DISTRIBUTED PROCESSING                             <ul style="list-style-type: none"> <li>– DIGITRUST</li> <li>– RETRIVUE</li> </ul> </li> <li>• PROGRAMMING LANGUAGES SUPPORTED                             <ul style="list-style-type: none"> <li>– BASIC</li> <li>– COBOL</li> <li>– FORTRAN</li> </ul> </li> <li>• DATA MANAGEMENT SOFTWARE                             <ul style="list-style-type: none"> <li>– QUESTOR</li> <li>– COMPOSIT 77</li> </ul> </li> <li>• DATA BASES AVAILABLE                             <ul style="list-style-type: none"> <li>– INTERNATIONAL MONETARY FUND</li> <li>– VALUE LINE</li> <li>– CITIBASE</li> <li>– VSCOM</li> <li>– PROFILES WORKFORCE CENSUS</li> <li>– SITE II</li> </ul> </li> <li>• FINANCIAL TOOLS                             <ul style="list-style-type: none"> <li>– FCS (FINANCIAL MODELING)</li> <li>– TACTICS (TIME SERIES ANALYSIS)</li> <li>– VSCOM-190 (REPLACEMENT COST ACCOUNTING)</li> <li>– DATAFORM III (FINANCIAL MODELING)</li> </ul> </li> <li>• FINANCIAL SERVICES (PARSEC)                             <ul style="list-style-type: none"> <li>– AUDITING AND ACCOUNTING FUNCTIONS</li> <li>– FINANCIAL ANALYSIS</li> <li>– INVESTMENTS</li> <li>– STATISTICS</li> <li>– FINANCIAL CONSOLIDATION AND REPORTING</li> <li>– COMPLIANCE REPORTING</li> <li>– BUDGETING</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• HUMAN RESOURCE MANAGEMENT (PROFILES)                             <ul style="list-style-type: none"> <li>– EEO REPORTING</li> <li>– LABOR RELATIONS</li> <li>– EMPLOYEE BENEFITS</li> <li>– COMPENSATION</li> <li>– SALARY ADMINISTRATION</li> <li>– RETIREMENT PLANNING</li> <li>– SKILLS INVENTORY</li> <li>– WAGE/PRICE PROGRAM COMPLIANCE</li> </ul> </li> <li>• CERTIFIED PUBLIC ACCOUNTANTS (COMPASS)                             <ul style="list-style-type: none"> <li>– ACCOUNTING</li> <li>– AUDITING</li> <li>– INVESTMENTS</li> <li>– PENSION PLAN ANALYSIS</li> <li>– TAX PLANNING AND PREPARATION</li> <li>– TIME AND BILLING</li> <li>– PROJECT ACCOUNTING</li> <li>– GENERAL LEDGER</li> <li>– AICPA/COMSHARE LIBRARY</li> <li>– VSCOM 33</li> <li>– REAL ESTATE ANALYSIS</li> <li>– ACCOUNTING PROJECTION</li> <li>– CASH FLOW</li> </ul> </li> <li>• TELEPHONE INDUSTRY (4.1.1)                             <ul style="list-style-type: none"> <li>– DIAL ASSIGNMENT (MIDAS)</li> <li>– CUSTOMER USAGE REPORTS</li> <li>– DYNAMIC LOAD BALANCE</li> <li>– EQUIPMENT BALANCE INFORMATION (EBIS)</li> </ul> </li> <li>• TRUST ADMINISTRATION SERVICES*                             <ul style="list-style-type: none"> <li>– PERSONAL TRUST (DIGITRUST, TRUSTOR II)</li> <li>– CORPORATE TRUST (AUTOPAY)</li> <li>– EMPLOYEE BENEFIT TRUST (TRILOG, TRASOP I, PENSION PAY)</li> <li>– FIDUCIARY TAX RETURNS (DIGITAX)</li> </ul> </li> </ul>

\*TRUST SERVICES ARE PROVIDED FROM A BATCH DATA CENTER IN PHILADELPHIA.

## COMPANY HIGHLIGHT/COMSHARE, INC.

- The trust system, called Digitrust, is designed for use by medium-sized trust departments. Offered since 1976, Comshare currently has 35 systems installed. Price of a system ranges from \$40,000 to \$100,000 for the software license and hardware. Digitrust operates on DEC PDP/11s. Applications available on the minicomputer include:
  - Personal Trust Accounting.
  - Employee Benefit Participation Accounting.
  - Bond/Coupon Paying and Reconciliation.
- The minicomputer system for telephone companies is called Retrivee and has been offered since 1977. Price of a system ranges from \$50,000 to \$350,000. Retrivee is sold on Data General Nova Models 3 and 4 and on Eclipse 130s. Applications available include:
  - Directory Assistance.
  - Intercept.
  - Dial Assistance Charging.
- Computer Research Company (CRC) provides batch and remote batch processing from a data center in Chicago. It does not offer any unique specialty applications and basically sells computer time at low rates on Amdahl 470V/8s.
- Substantial losses were incurred in Comshare's tax processing business as efforts were initiated to consolidate two previously acquired companies, Digitax and Systematic Computer Services. Comshare's revenues from tax services were \$7.4 million in FY 1980, and losses of approximately \$1 million were incurred. In the previous year, tax processing services was slightly profitable on revenue of about \$5.7 million.
  - In an attempt to eliminate additional losses, Comshare has reduced its tax processing centers from eight to five, adjusted prices, installed laser printers and consolidated its printing activities in three centers to reduce labor costs. Comshare has also considered selling its tax business.
  - Comshare's tax services are sold in more than 30 states. Federal and state income tax returns for 26 states are processed.
- Comshare is completing development of a product known as the EXECUCHART<sup>TM</sup> System, which provides color computer graphics for use by executives and their staff. EXECUCHART is offered on a minicomputer and is now being test-marketed. The new system can operate on a standalone basis or in conjunction with the network.

**INDUSTRY MARKETS** Comshare derives the majority of its revenues from CPA firms, the telephone industry, financial institutions, discrete manufacturing, insurance and government sectors. Comshare's largest client is the various subsidiaries of AT&T, which accounted for 6% (\$4.7 million) of total revenues in 1980, and 10.3% (\$5.5 million) in 1979.

**GEOGRAPHIC MARKETS** Approximately 62% of Comshare's 1980 revenues were derived from U.S. clients and 38% from European operations.

### COMPUTER HARDWARE

- Comshare operates a private, international telecommunications network, with connections to over 90 cities throughout the U.S., Europe and Canada. The network consists of over 25,000 miles of leased telephone circuits controlled by a proprietary, minicomputer-based, hardware/software system called Telegrid. Telegrid employs Comshare-designed technology to detect and correct errors in transmission.
- In 1980, Comshare augmented its private telecommunications network by connecting to the GTE Telenet network. Services are now available to more than 150 cities in 22 countries.
- COMMANDER II, Comshare's proprietary operating system, operates in interactive and remote batch modes. COMMANDER II-based services are offered from data centers in Ann Arbor and London. Comshare has licensing agreements for COMMANDER II in Tokyo (Japan Information Service, Ltd.) and Toronto (Comshare, Ltd.).
- Equipment installed in the two remote computing centers consists of:
  - Ann Arbor.
    - 10 Xerox 940s.
    - 17 Xerox Sigma 9s.
  - London.
    - 14 Xerox Sigma 9s.
- Comshare has upgraded a number of the Sigma 9 systems with new central processors and advanced MOS memory manufactured by Honeywell.
- Computer Research Company has two Amdahl 470V/8s installed in its data center in Chicago.
- Data centers for Comshare's tax processing services are in New York, Atlanta, St. Louis, Phoenix and Portland.
- Comshare's Trust Services Division operates a data center in Philadelphia and has an IBM 360/65 installed. All trust applications operate in a batch mode.

*Bruce ZEWE  
D.R. Corp. Comm.*

## COMPANY HIGHLIGHT

**COMSHARE, INC.**  
3001 South State Street  
Ann Arbor, MI 48106  
(313) 994-4800

Richard L. Crandall, President  
Public Corporation, OTC  
Total Employees: 1,100  
Total Revenues, Fiscal Year End  
6/30/79: \$52,980,400

### THE COMPANY

- Comshare was founded in 1966 by six individuals previously associated with the University of Michigan, to offer commercial timesharing services. The company has since expanded its services to international markets and starting in 1972-1973, began specializing in providing RCS services within five application areas: personnel administration; financial planning and analysis; certified public accounting; telephone company traffic administration; and trust administration.
- Comshare's 1979 revenues increased to \$52,980,000, up 107% from \$25,639,100 in 1978. Management attributes the increase to growth in the company's specialty services and to several acquisitions completed during FY 1979. A five year financial summary follows:

COMSHARE  
FIVE YEAR FINANCIAL SUMMARY  
(\$ Thousands, Except Per Share Data)  
(FYE 6/30)

ITEM \ FISCAL YEAR	1979	1978	1977	1976	1975
Revenues	\$52,980	\$25,639	\$18,213	\$13,758	\$12,312
. Percent increase from previous year	107%	41%	32%	12%	29%
Income before taxes and extraordinary item	\$ 7,730	\$ 3,757	\$ 2,266	\$ 1,291	\$ 1,510
. Percent increase (loss) from previous year	106%	66%	76%	(15%)	8%
Net income	\$ 4,732	\$ 3,413	\$ 2,019	\$ 1,173(A)	\$ 1,499(A)
. Percent increase (loss) from previous year	39%	69%	72%	(22%)	-
Earning per share before extraordinary credits	\$ 1.31	\$ .97	\$ .64	\$ .35	\$ .37
. Percent increase (loss) from previous year	35%	52%	83%	(5%)	(62%)

1 of 6  
December 1979

## COMPANY HIGHLIGHT/COMSHARE, INC.

- (A) Includes extraordinary credits of \$452,000 (1976) and \$744,000 (1975) for reduction in income taxes resulting from carryforward of prior years' operating losses.
- The companies acquired by Comshare which contributed significantly to FY 1979 revenue growth were:
    - Trust Management Systems, Inc. (TMS) in June 1978. TMS develops software and provides systems consulting for bank trust departments. Terms of the acquisition were 54,324 shares of Comshare stock and \$66,500 in cash. Comshare stock issued to the shareholders of TMS was valued at \$291,900 and goodwill of \$189,300 was recorded in the transaction.
    - Effective November 1, 1978, Comshare acquired the remaining 55% ownership of Comshare International, BV (CIBV) in exchange for 789,000 shares of stock. The value of the transaction was estimated at approximately \$5.1 million. In a related transaction, Comshare also increased by approximately 5% its ownership share in Comshare, Ltd. (CSL), a Canadian firm. Comshare currently owns 10.8% of CSL.
    - In February 1979, Comshare acquired Digitax, Inc., a wholly owned subsidiary of COAP Systems, Inc. Comshare acquired Digitax for 166,666 shares of stock and assumed certain liabilities amounting to \$2,745,100. Digitax provides tax processing services to 26 states from offices located in New York, Houston, Los Angeles and Boston. Associated Computer Services, Inc. of Portland, Oregon, a franchise of Digitax, was also acquired.
    - Retrivue Systems, Inc., a privately held software and systems house in Orlando, Florida, was acquired by Comshare for an undisclosed price. Retrivue markets software and a turnkey system based on Data General computers for a telephone directory assistance system.
  - Another acquisition is currently pending:
    - In November 1979, Comshare announced it would acquire all the outstanding common stock of Computer Research Company (CRC), effective January 1, 1980. CRC is a provider of IBM-based computer services in the Chicago area and has revenues of over \$7 million. Comshare's purchase price of CRC consists of a \$3.75 million cash down payment and additional payments amounting to no more than \$1.25 million over the next two years.
  - Comshare is organized into the following operating groups:
    - Communication Product Services develops applications which address the needs of telephone companies, particularly in the area of network administration. Included in this organization are the 4.1.1 products.
    - Compass Services provides specialty software and services for certified public accountants.

## COMPANY HIGHLIGHT/COMSHARE, INC.

- Commercial Services markets and supports Comshare's personnel administration and financial planning computer services.
- Trust Services provides computerized trust services to the trust industry (banks, insurance companies and other organizations with trust powers).
- Competition for Comshare's specialty services stem from:
  - Telephone industry: MCAUTO and Tymshare.
  - Trust Services: SEI and Bradford National.
  - Personnel administration: Information Sciences and Management Science America.
  - Tax Services: CCH Computax, Tymshare, and other regional firms.

## KEY PRODUCTS AND SERVICES

- Essentially 100% of Comshare's revenues are derived from processing services.
- Comshare's FY 1979 revenues from industry specialty applications increased 170% over 1978 revenues. As shown in the following table, specialty industry products contributed 77% of total revenues in 1979:

COMSHARE  
REVENUES SOURCES  
(\$ Thousands, as of FYE 6/30)

ITEM \ FISCAL YEAR	1979	1978	1977
Industry Specialty Revenues	\$40,795	\$ 15,127	\$ 9,289
. Percent of Total	77%	59%	51%
General Processing Revenues	\$12,185	\$ 10,512	\$ 8,924
. Percent of Total	23%	41%	49%

- Specialty applications offered in the U.S. are:
  - Parsec, a group of products for financial modeling, inflation accounting, consolidated budgeting and performance reporting.
  - 4.I.I., an integrated system for telephone companies, which controls administrative activities such as telephone number assignment and voice traffic load balancing.
  - Profiles, an information processing system for corporate personnel managers. Profiles provides applications for the control and reporting of personnel records, salary administration, EEO, profit sharing, and employee benefits.
  - Compass, a package of programs for assisting certified public accountants with auditing, tax processing and practice development services, as well as internal time, billing and general ledger services.
  - Trust services, include applications to support trust administration, pension check preparation and trust department operations.

## COMPANY HIGHLIGHT/COMSHARE, INC.

- The major specialty applications marketed in Europe include Parsec and:
  - Monita, a foreign exchange banking application.
  - Counsela, provides general problem solving applications to government agencies.
  - Visor, a stock and production control system for discrete manufacturing clients.
  - Femis, a foreign exchange accounting and management information system.
- In addition, Comshare derived 10% of its total revenues (\$5.3 million) from the use of QUESTOR, a proprietary data management language.
- A profile of the key applications offered on Comshare's U.S. network is presented in Exhibit A. New applications introduced within the last year were:
  - VSCOM 33, to assist accounting firms perform inflation calculations.
  - Profiles Compliance System to assist corporations in meeting the Office of Federal Contract Compliance Program (OFCCP) guidelines.
  - A Computerized Fiduciary Tax Return service for trust services management.

**INDUSTRY MARKETS** Comshare derives the majority of its revenues from CPA firms, the telephone industry, financial institutions, discrete manufacturing, insurance and government sectors.

**GEOGRAPHIC MARKETS** Approximately 71% of Comshare's 1979 revenues were derived from U.S. and Canadian based services, and 29% from European operations.

### COMPUTER HARDWARE

- Comshare has established an international private telecommunications network, with connections to over 90 cities throughout the U.S., Europe and Canada. The network consists of over 25,000 miles of leased lines controlled by a proprietary minicomputer based hardware/software system called Telegrid. Telegrid employs Comshare-designed technology to detect and correct errors in transmission.
- COMMANDER II, Comshare's proprietary operating system, operates in interactive and remote batch modes. COMMANDER II based services are offered from data centers in Ann Arbor and London. Comshare has licensing agreements for COMMANDER II in Tokyo (Japan Information Service, Ltd.) and Toronto (Comshare, Ltd.).

EXHIBIT A

COMSHARE

KEY APPLICATIONS ON THE U.S. NETWORK

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT                             <ul style="list-style-type: none"> <li>- XEROX 940, COMMANDER II</li> <li>- XEROX SIGMA 9, COMMANDER II</li> </ul> </li> <li>• PROGRAMMING LANGUAGES SUPPORTED                             <ul style="list-style-type: none"> <li>- BASIC</li> <li>- COBOL</li> <li>- FORTRAN</li> </ul> </li> <li>• DATA MANAGEMENT SOFTWARE                             <ul style="list-style-type: none"> <li>- QUESTOR</li> <li>- COMPOSIT 77</li> </ul> </li> <li>• DATA BASES AVAILABLE                             <ul style="list-style-type: none"> <li>- INTERNATIONAL MONETARY FUND</li> <li>- VALUE LINE</li> <li>- CITIBASE</li> <li>- VSCOM-90</li> <li>- PROFILES WORKFORCE CENSUS</li> <li>- SITE II</li> </ul> </li> <li>• FINANCIAL TOOLS                             <ul style="list-style-type: none"> <li>- FCS (FINANCIAL MODELING)</li> <li>- TACTICS (STATISTICAL ANALYSIS)</li> <li>- VSCOM-190 (REPLACEMENT COST ACCOUNTING)</li> <li>- DATAFORM III (FINANCIAL MODELING)</li> </ul> </li> <li>• FINANCIAL SERVICES (PARSEC)                             <ul style="list-style-type: none"> <li>- AUDITING AND ACCOUNTING FUNCTIONS</li> <li>- FINANCIAL ANALYSIS</li> <li>- INVESTMENTS</li> <li>- STATISTICS</li> <li>- FINANCIAL CONSOLIDATION AND REPORTING</li> <li>- COMPLIANCE REPORTING</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• HUMAN RESOURCE MANAGEMENT (PROFILES)                             <ul style="list-style-type: none"> <li>- EEO REPORTING</li> <li>- LABOR RELATIONS</li> <li>- EMPLOYEE BENEFITS</li> <li>- COMPENSATION</li> <li>- SALARY ADMINISTRATION</li> <li>- RETIREMENT PLANNING</li> <li>- SKILLS INVENTORY</li> <li>- WAGE/PRICE PROGRAM COMPLIANCE</li> </ul> </li> <li>• CERTIFIED PUBLIC ACCOUNTANTS (COMPASS)                             <ul style="list-style-type: none"> <li>- ACCOUNTING</li> <li>- AUDITING</li> <li>- INVESTMENTS</li> <li>- PENSION PLAN ANALYSIS</li> <li>- TAX PLANNING AND PREPARATION</li> <li>- TIME AND BILLING</li> <li>- PROJECT ACCOUNTING</li> <li>- GENERAL LEDGER</li> <li>- AICPA/COMSHARE LIBRARY</li> <li>- VSCOM 33</li> </ul> </li> <li>• TELEPHONE INDUSTRY (4.1.1)                             <ul style="list-style-type: none"> <li>- DIAL ASSIGNMENT</li> <li>- CUSTOMER USAGE REPORTS</li> <li>- VOICE TRAFFIC LOAD BALANCING</li> <li>- EQUIPMENT USAGE RECORDS</li> </ul> </li> <li>• TRUST ADMINISTRATION SERVICES                             <ul style="list-style-type: none"> <li>- EMPLOYEE PROFIT SHARING</li> <li>- CORPORATE BOND ACCOUNTING</li> <li>- PERSONAL TRUST ACCOUNTING</li> <li>- FIDUCIARY TAX RETURNS</li> </ul> </li> </ul>

COMPANY HIGHLIGHT/COMSHARE, INC.

- Equipment used to provide processing services consists of:
  - Remote Computing Services.
    - U.S. (Ann Arbor).
      - 9 Xerox 940s.
      - 16 Xerox Sigma 9s.
      - 2 Xerox 930s.
    - Europe (London).
      - 11 Xerox Sigma 9s.
  - Batch Services.
    - One IBM 360/65 in Philadelphia for tax processing services.
- Comshare is in the process of replacing its Xerox Sigma 9 systems with Honeywell equipment. In a contract award of \$14.2 million, Honeywell has agreed to manufacture 24 central processors with advanced MOS memory which will be compatible with Comshare's COMMANDER II operating system. The transition in hardware conversion will continue through 1982.

cc: Linda Van Schayk  
Dir, Corp Communications

## COMPANY HIGHLIGHT

COMSHARE INC.  
3001 So. State Street  
Ann Arbor, MI 48106  
(313) 994-4800

Richard L. Crandall, President  
Public corporation, OTC  
Total employees: 450 (U.S.)  
Total revenues, fiscal year-end  
6/30/76: \$13.8 million  
6/30/77: \$18.2 million

## THE COMPANY

- COMSHARE, primarily a remote computing services vendor, increased its revenues from \$12.3 million to \$13.7 million between 1975 and 1976, a growth of 11.4%. The 1977 U.S. sales reached \$18.2 million a growth between 1976 and 1977 of 32%.
  - Eleven percent, or \$2.0 million, of the 1977 revenue increase resulted from two acquisitions:
    1. Trilog, specializing in computer-based employee benefit administration and reporting services. - joint acquisition w/ Pentameter
    2. Systematic Computer Systems, Inc., specializing in tax return processing.
  - After-tax earnings rose to \$1,475,000 in 1977, a 105% growth over the \$720,000 in 1976. Earnings per share during the same period rose 83% from \$.52 to \$.95 with average outstanding shares of 1,548,000.
- Unconsolidated 1977 overseas revenue from affiliated companies brought total revenues for the entire COMSHARE group to \$30.7 million. Equity in earnings of affiliated companies was \$66,000 in 1977 compared with the 1976 loss of \$129,000.
- COMSHARE is making a major effort:
  - To focus its resources on specialized markets and applications.
  - To expand overseas by developing local operations in each country.
  - To maximize the value-added in each of the services it provides.

## KEY PRODUCTS AND SERVICES

- COMSHARE specialty products include:
  - COMPASS, generating \$2.7 million in revenues. It provides professional accounting services to accounting firms. It is used by over 1600 accounting firms, including 28 of the 30

## COMPANY HIGHLIGHT/COMSHARE INC.

*Spec* largest CPA firms in the country. COMSHARE has been selected by the American Institute of CPA's as the source of professional national program library services. Functions performed include general ledger, project accounting, internal time and billing, staff scheduling, auditing, and tax processing.

- *Spec* 4.1.1 Systems, for Telephone Equipment Inventory and Number Assignment, generating \$2.2 million. Designed for telephone companies, it balances central switching office traffic and manages, assigns, and forecasts central office equipment. It is used by six of the 19 Bell Telephone operating companies and by two of the 10 major independent telephone companies.
- *GD* Human Resource Management software, PRO/FILES and EBS, generating \$2.3 million revenues. PRO/FILES is a human resource management system designed for personnel managers to create inventories of employee skills, perform statistical analysis, forecast manpower requirements, and prepare reporting information required by the EEO and Affirmative Action. EBS is a product for employee benefit record keeping and administration and is sold primarily to corporate clients and banking institutions.
- *Spec* COMSHARE's financial products and services, including its replacement cost accounting software, VSCOM-190, generate \$1.6 million in revenues.

APPLICATIONS Specialty applications are COMSHARE's primary source of domestic revenues in 1977, as shown below:

	<u>1977 \$U.S.</u>	<u>% Total U.S.\$</u>
Specialty	\$ 8.8m	48%
Data base management	5.8	32
Utility	3.6	20
	<u>\$18.2</u>	<u>100%</u>

*trust* INDUSTRY MARKETS COMSHARE markets to a wide variety of industries. Its industry-specific accounting and telephone company product lines along with two industry-independent personnel and financial product lines generated approximately 50% of 1977 revenues. Remaining revenues are derived from generalized and data management services.

GEOGRAPHIC MARKETS Fifty-four cities across the U.S., Canada, Europe and Japan. U.S. revenues are spread throughout the country with some concentration in Washington and Montana.

COMPANY HIGHLIGHT/COMSHARE INC.

COMPUTER HARDWARE AND SOFTWARE

- COMSHARE's network of 78 Interdata minicomputers and Xerox Sigma 9's provide remote computing services utilizing proprietary software called Commander II. The Commander I service is supported by 10 Xerox 940's. The company also has an IBM 360/65 in Philadelphia. A cable link to the company's European affiliate's data center in London, England enables international customers to access Commander II services on either side of the Atlantic.
- The company and its international affiliates operate four data centers: Ann Arbor, London, Tokyo, and Toronto.
- COMSHARE will be required to upgrade the 940s and the Sigma 9's in the long-term future. Although Xerox is no longer in the computer business, Sigma 9 systems are still available and the company foresees no problems in acquiring additional systems for capacity needs. The company will make future decisions with regard to procuring new or additional equipment types based on product-line need. This will necessitate upgrading its current IBM equipment, procuring minicomputer systems where economically feasible and purchasing additional Sigma 9's or other mainframe and peripheral equipment that can be made compatible with Sigma 9 systems.



COMPANY COMSHAREFY 6/30

FISCAL YEAR	ANNUAL REVENUE (\$millions)	ANNUAL GROWTH RATE (%)	COMMENTS
1971	<u>5</u>	<u>40</u>	FINANCIAL SERVICES PART OF TRILOG ACQ.
1972	<u>7</u>	<u>14</u>	
1973	<u>8</u>	<u>13</u>	
1974	<u>9</u>	<u>33</u>	
1975	<u>12</u>	<u>8</u>	
1976	<u>13</u>	<u>38</u>	
1977	<u>18</u>		
1978	<u>24</u>	<u>24 %</u>	Previous years Average
		<u>33 %</u>	1977-1978
		<u>21%</u>	Max Rate Projected
			Min Rate Projected
1979	Max Revenue <u>\$ 29 M</u>	Min Revenue _____	Avg. Revenue _____
1980	<u>35</u>	_____	_____
1981	<u>43</u>	_____	_____
1982	<u>51</u>	_____	_____
1983	<u>62</u>	_____	_____



## COMPANY HIGHLIGHT

COMSHARE INCORPORATED  
3001 South State Street  
Ann Arbor, Michigan 48106  
(313) 994-4800

Richard L. Crandall, President  
Public corporation  
Total and Computer services sales  
as of FY ending 6/75:  
\$12,312,478 (U.S.)

~~676!~~ \$13,758,000

NUMBER OF EMPLOYEES engaged in computer services: 300

KEY PRODUCTS/SERVICES: Comshare provides primarily remote computing services and some software (professional) services and software products. The firm concentrates marketing efforts on the following three products:

- COMPASS: provides professional accounting services to accounting firms. It is in use at over 60 accounting firms and has been selected by the California Society of CPA's and the American Society of CPA's as the source of professional national program library services. Functions performed include general ledger, project accounting, internal time and billing, staff scheduling and auditing.
- 4.1.1 Systems: designed for telephone companies to balance central switching office traffic, manage, assign and forecast central office equipment. It is in use at least seven of the 21 American Telephone and Telegraph operating companies.
- PRO/FILES: a human resource management system designed for personnel managers to create inventories of employee skills, perform statistical analysis, forecast manpower requirements and prepare information required by the EEO and OSHA. Soon a module for employee retirement income will be added. The product is in use at some 35 companies.

Additional products include:

- COMPOSIT '77: a collection of computer programs for data management which were developed by COMSHARE. Languages available to users include FORTRAN, COBOL as well as proprietary languages such as XTRAN and QED.
- DATAFORM II: for financial modeling.
- SITE: demographic site analysis.
- TACTICS: for analysis of cross-sectional data; performs regression analysis, variance analysis, etc.
- THE EDITOR: for text editing.
- COMMANDER II: software for the Xerox Sigma computer system.
- COMMANDER I: software for the Xerox 940 computer system.
- ICS, Integrated Communications System: name for U.S. telecommunications network.
- TELEGRID: name for International telecommunications network.

## COMPANY HIGHLIGHT/COMSHARE INCORPORATED

APPLICATIONS: COMSHARE offers a cross-section of general business, scientific, and data base applications. Emphasis more recently has moved from scientific to general business applications such as:

- personnel administration
- accounting
- telephone traffic balancing

INDUSTRY MARKETS: COMSHARE has customers in virtually all of the major industry sectors, but with most concentration in telephone, and manufacturing. Revenues from AT&T and subsidiaries account for 18% of revenues. Sales to government is 6% and to education just 1% of annual sales.

GEOGRAPHIC MARKETS: COMSHARE users are distributed throughout the U.S., with some concentration in the North Central region. COMSHARE is very active on the international front, with a licensing agreement with COMSHARE Limited in Canada; also COMSHARE International BV, a holding company has opened offices in England, Switzerland, Belgium and the Netherlands. COMSHARE has entered the Japanese and Far Eastern market through a joint venture with Miroku & Co., a Japanese management and accounting consulting firm. Worldwide sales represent an additional \$7 million in revenues. COMSHARE serves over 1000 organizations in over 80 worldwide locations.

ICS, the U.S. and Canadian network connects over 60 major cities. In addition, COMSHARE has branch offices at the following locations:

3355 Lenox Road  
Atlanta, Georgia 30326  
(404) 262-2251

4010 Executive Park Drive  
Cincinnati, Ohio 45241  
(513) 563-4755

20 William Street  
Wellesley Office Park  
Wellesley, Massachusetts 02181  
(617) 235-3650

Orangewood Place Building  
3690 Orange Place  
Beechwood, Ohio 44122  
(216) 464-9053

6300 River Road  
Rosemont, Illinois 60018  
(312) 696-4200

17117 W. Nine Mile Road Suite 1025  
Southfield, Michigan 48075  
(313) 559-1400

Harris Bank Building Suite 1752  
111 West Monroe  
Chicago, Illinois 60603  
(312) 782-9414

7505 Fannin  
Suite 301  
Houston, Texas 77054  
(713) 795-4451

6151 West Century Boulevard  
Suite 906  
Los Angeles, California 90045  
(213) 649-4520

489 Fifth Avenue, Ninth Floor  
New York, New York 10017  
(212) 687-3900

607 Marquette Avenue Suite 409  
Minneapolis, Minnesota 55402  
(612) 332-8766

111 Presidential Boulevard Suite 219  
Bala-Cynwyd, Pennsylvania 19004  
(215) 835-6644

COMPANY HIGHLIGHT/COMSHARE INCORPORATED

One Manor Oak  
1910 Cochran Road  
Pittsburgh, Pennsylvania 15220  
(412) 343-7700

7777 Bonhomme Suite 1707  
Clayton, Missouri 63105  
(314) 862-7212

690 Market Street Suite 900  
San Francisco, California 94104  
(415) 956-6676

1501 Wilson Boulevard  
Arlington, Virginia 22209  
(703) 524-1405

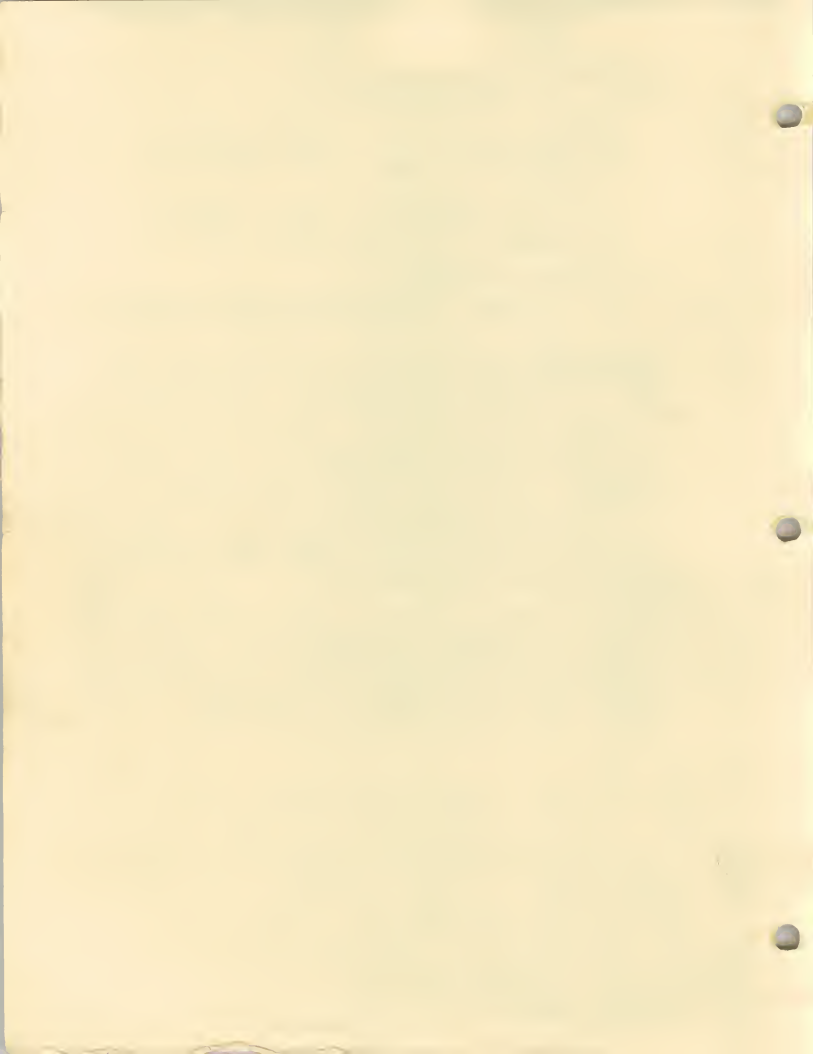
COMPUTER HARDWARE AND SOFTWARE:

3	Xerox Sigma 9s	customized software, called COMMANDER II, Ann Arbor
10	Xerox 940s	customized software, called COMMANDER I, Ann Arbor

OVERALL ASSESSMENT AND TRENDS: COMSHARE was founded in 1966 and first became profitable in 1972. President Crandall is young, about 33, and the rest of top management is also 40 or younger. A primary corporate objective is controlled and consistent growth, and to expand revenues at a rate faster than the industry growth, while at the same time remaining profitable.

While COMSHARE is allegedly a widely held public corporation, a close review of stock ownership suggests that the Weyerhaeuser family, founder of Weyerhaeuser Company in Tacoma, Washington, holds controlling interest in COMSHARE. The wives of three members of the board of directors namely, Mrs. Richard Crandall, Mrs. John Driscoll, and Mrs. Stanley R. Day, are in fact descendants of the Weyerhaeuser family and own stock in COMSHARE. They, and other connections to the Weyerhaeuser family provide an excellent opportunity for financing which can provide COMSHARE the wherewithall it needs to fulfill its growth objectives.

Since 1973, COMSHARE has been targeting specialty applications and industry markets. It has a sales force of some 120 people which is keyed to these areas, namely COMPASS, 4.1.1. and PRO/FILES. This focus is undoubtedly what led to a 30% gain in annual sales for 1975 over 1974 and net profits of 12.2%. With continued emphasis on marketing of specialized products combined with strong financial reserves, results for 1976 and beyond may very well be as positive as they were for 1975.



*Dropping*

→ *Ronald K. Sawyer VP*

#### COMPANY HIGHLIGHT

CONCAP COMPUTING SYSTEMS, INC.  
7700 Edgewater Drive, Suite 700  
Oakland, CA. 94621  
(415) 635-5750

Steward Larson, President  
Private corporation  
Total employees: 4  
Total revenues, fiscal year  
end 6/30/77: \$1,750,000\*

*AGE 12/21/77 1.3 mil*

#### THE COMPANY

- Concap Computing Systems, Inc. was founded in 1965 to provide interactive remote computing services for civil and structural engineers and land surveyors. Two of the four staff members are registered civil engineers in California. Concap feels this gives it a unique ability to understand the problems of its client base.
- The company currently offers turnkey systems as well as interactive services to its approximately 105 clients.
- Marketing consists of exhibiting at conventions and industry shows, following leads, cold calls, direct mail campaigns, speaking at local engineering meetings, and advertising in professional journals. Two persons are on the marketing staff.

#### KEY PRODUCTS AND SERVICES

- Approximately 90% of Concap revenues are derived from the sale of its interactive remote computing services. The remaining 10% are from turnkey systems first offered in 1977. Concap is actively marketing the turnkey systems and expects them to be a larger percent of revenues in the next few years.
- The interactive services, having approximately 100 users, are sold as a package which includes the following programs:
  - Traverse adjustment
  - Traverse geometry
  - Vertical curve staking
  - Earthwork
  - Map check
  - Stadia reduction
  - Photogrammetry
  - Geographical positions
  - Frame analysis
  - Moment distribution of continuous spans
  - Network analysis
  - Backwater curves

\* INPUT estimate

## COMPANY HIGHLIGHT/CONCAP COMPUTING SYSTEMS, INC.

- Concap also offers automatic drafting services for sub-division layout, earthwork cross sections and other engineering needs.
- Payroll and inventory control services are available with both the interactive services and turnkey systems.
- The DEC PDP-11 based turnkey system is an in-house interactive remote computing system. Concap supplies new or used DEC PDP equipment on an OEM basis or uses the clients' existing PDP-11 equipment.
  - Concap installs its own FORTRAN and its timesharing monitor as well as the software programs listed above. Once installed, the Concap turnkey system does not have any link to Concap's central PDP-11 processor.
  - The company claims that any size PDP-11 can be used although the most common models range in size from PDP-11/05s to PDP-11/45s.
- All Concap programs are customized to meet user requirements.

APPLICATIONS Approximately 75% of Concap revenues are derived from the scientific and engineering services for civil and structural engineering and land surveying applications. The remaining 25% are derived from general business services to the company's engineering clients.

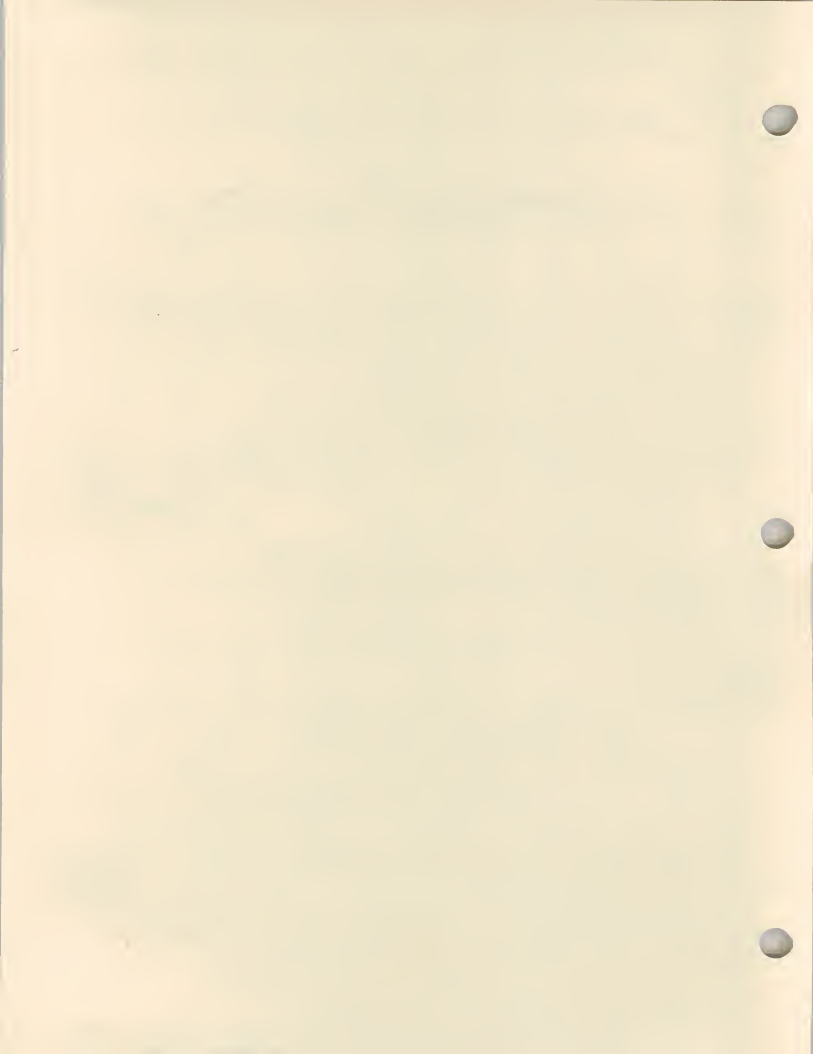
INDUSTRY MARKETS Concap users are from the services industry: civil engineers, structural engineers, and land surveyors. Clients are generally small companies with 10 to 200 employees.

### GEOGRAPHIC MARKETS

- In 1977, 80% of Concap users are located in California; 15% in Houston, Texas; and 5% distributed through the U.S.
- Concap has recently extended its service to 93 cities in the U.S., Canada, and Mexico through the Telenet network. Branch offices in Canada and Houston were closed when Concap began using Telenet services. This resulted in the loss of several Canadian customers although Houston users remained with Concap.
- Although no new customers have been added as a result of the Telenet connection, management anticipates that the resultant geographic expansion from this contract will significantly increase the company's ability to service new markets while concurrently saving money.

COMPANY HIGHLIGHT/CONCAP COMPUTING SYSTEMS, INC.

COMPUTER HARDWARE AND SOFTWARE The company has a DEC PDP-11 to provide interactive remote computing services. A Calcomp 718 plotter provides add-on interactive graphics services.



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

March 1996

## Consilium, Inc.

**Chairman:** J.J. Golovin  
**President & CEO:** T.A. Tomasetti  
**485 Clyde Avenue**  
**Mountain View, CA 94043**  
**Phone:** (415) 691-6100  
**Fax:** (415) 691-6130



**CONSILIUM**

---

Status:	Public
Employees:	210 (10/95)
Revenue:	\$33,857,000
Fiscal Year End:	10/31/95

---

### Key Points

- Consilium is the world's leading supplier of integrated manufacturing execution systems (MES) software and services to discrete and process manufacturers.
- Consilium has committed substantial resources over the past several years to creating a new product (*FlowStream*®) for the process manufacturing industry and developing distributed, open system versions of its *WorkStream*® product. Research and development expenses represented 32% of

total revenue in fiscal 1995, 39% in fiscal 1994, and 36% in fiscal 1993.

- In July 1995, Consilium introduced *WorkStream DFS*—a next-generation distributed technology framework—as well as three new application servers. The distributed technology framework is based on a software message bus, which connects applications, software systems and manufacturing equipment as servers on a network.
- In October 1995, Consilium announced an alliance with Avnet Computer, Digital Equipment Corporation and Oracle Corporation to jointly provide an upgrade path for *WorkStream* users to migrate from

older Digital VAX systems to Digital's Alpha platform.

- In November 1995, Consilium announced a partnership with Oracle to create a total supply chain management solution for the semiconductor industry.

### Company Description

Consilium provides integrated MES software products and associated support services to discrete and process manufacturers.

The company's products monitor and control the five essential elements of manufacturing—materials, equipment, personnel, specifications and facilities—throughout the production process and correlate critical data for real-time visibility and control of manufacturing operations.

- The *WorkStream DFS* (Distributed Factory System) product line is targeted at manufacturers that produce their product in discrete lots or batches, particularly those in the semiconductor, electronics and aerospace industries.
- The *FlowStream* product line is targeted to industries that employ batch process manufacturing, such as pharmaceuticals, medical devices and specialty chemicals.

Consilium also offers a range of services to complement its products, including a Customer Response Center, training classes and both pre- and post-implementation consulting services.

Consilium was incorporated in California in 1978 and reincorporated in Delaware in March 1991. The company has been a Digital Cooperative Marketing Program (CMP) participant since 1984 and is a Hewlett-Packard Independent Software Vendor (ISV).

### Operations and Structure

Consilium's key executives are listed below:

#### Consilium Key Executives

Name	Title
Jonathan J. Golovin	Chairman
Thomas A. Tomasetti	President and CEO
Frank Kaplan	VP Software Development
Edward Norton	VP International Field Operations and Worldwide Services
Lloyd Payton	VP American Field Operations
Richard H. Van Hoesen	VP, Admin and Finance, CFO
Clifton Wong	Controller
Ralph Zak	VP Marketing

U.S. offices are in Atlanta (GA), Bedminster and Cranford (NJ), Blue Bell (PA), Dallas (TX), Denver (CO), Irvine (CA), Minneapolis (MN) and Nashua (NH). A Canadian office is in Oshawa (Ontario).

International offices are in England, France, Germany, Singapore, South Korea, Taiwan and Japan. Consilium also has distributors in Japan, Israel, portions of Western Europe, and Southeast Asia.

### Company Strategy

More than four years ago, Consilium launched a strategy of investment to address the changing needs of manufacturers trying to stay competitive in a global marketplace. The company has developed a new distributed, open systems version of its flagship *WorkStream* product and created a new product (*FlowStream*) to address additional industries.

- The company has released *WorkStream DFS*, a distributed factory system to link disparate manufacturing systems, the first use of which will be to integrate new automation capabilities with the *WorkStream* and *WorkStream Open* products for semiconductor customers.
- Consilium has invested nearly \$40 million during the last four years to broaden its product offerings.

During fiscal 1994, Consilium underwent a worldwide consolidation of its operations (primarily related to several field offices) and recorded a restructuring charge of \$1.4 million.

In the pharmaceutical industry, Consilium's objective is to leverage the strength in its installed base. Customers are beginning to shift from single site implementations to corporate-wide rollouts.

In the semiconductor industry, Consilium is working to capitalize on growth in capital spending, particularly in Korea and Taiwan. Revenue over the last four quarters from the semiconductor industry in Asia is up 43% from the preceding 12 months. In addition, new opportunity exists in Japan, where major semiconductor companies for the first time are considering replacing internally developed systems with MES packages.

### Financials

Fiscal 1995 revenues were \$33.9 million, a 21% increase over fiscal 1994 revenue of \$27.9 million. The company recorded net income of \$627,000 in fiscal 1995, up significantly from net losses of \$6.2 million for fiscal 1994 (which included restructuring charges of \$1.4 million).

Consilium management attributes fiscal 1995 results to the following:

- Product license revenues increased 59% during fiscal 1995 due to higher levels of sales in both of the company's product lines.
  - Revenue from the *WorkStream DFS* product line increased 36% during fiscal 1995 to \$12.4 million, due to a resurgence in the semiconductor industry for Consilium's *WorkStream* and *WorkStream Open* products as well as commercial availability of the new *WorkStream DFS* application servers.
  - Revenue from the *FlowStream* product line increased 207% to \$4.4 million in fiscal 1995 due to a higher level of acceptance of the *FlowStream* product in the pharmaceutical industry, which historically has not used packaged computer systems to track plant floor operations.
- Services revenue increased 10% in fiscal 1995 due to an increase in revenue from consulting services and to higher maintenance levels from the *WorkStream DFS* product lines.
- Development revenues decreased 63% in fiscal 1995. This work is associated with porting agreements and co-funded development contract work for third parties. The decline in revenue was due to the completing of activities related to certain customer-funded development projects.

The company's return to profitability during fiscal 1995 was due to higher revenues and lower expenses, partly as a result of the restructuring that took place in the third quarter of fiscal 1994.

A five-year financial summary is shown on the following page.

**Consilium, Inc.**  
**Five-Year Financial Summary**  
(\$ Millions, except per share data)

Item	Fiscal Year				
	10/95	10/94	10/93	10/92	10/91
Revenue	\$33.9	\$27.9	\$28.5	\$27.6	\$27.4
• Percent change from previous year	21%	(2%)	3%	1%	(5%)
Income (loss) before taxes	\$1.2	\$(5.5)	\$(5.0)	\$(5.2)	\$(1.6)
• Percent change from previous year	122%	(11%)	(4%)	(225%)	(135%)
Net income (loss)	\$0.6	\$(6.2)	\$(5.3)	\$(5.3)	\$(1.1)
• Percent change from previous year	11%	(a)	—	(382%)	(134%)
Earnings (loss) per share	\$0.08	\$(0.85)	\$(0.75)	\$(0.77)	\$(0.15)
• Percent change from previous year	109%	(13%)	3%	(413%)	(132%)

(a) Includes a \$1.4 million restructuring charge taken in the third quarter of 1994, when Consilium curtailed operations at five sales offices.

*Revenue Analysis by Product/Service*

Approximately 50% of fiscal 1995 revenue was derived from software product licenses; 47%

from software maintenance and professional services; and 3% from development services. A three-year summary of source of revenue by product/service follows:

**Consilium, Inc.**  
**Three-Year Source of Revenue Summary**  
(\$ Millions)

Product/Service	Fiscal Year					
	10/95		10/94		10/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software products						
- WorkStream DFS	\$12.4	37%	\$9.2	33%	\$6.0	21%
- FlowStream	4.4	13%	1.4	5%	3.9	14%
	\$16.8	50%	\$10.6	38%	\$9.9	35%
Maintenance	10.8	32%	9.9	35%	9.6	34%
Professional services (a)	5.2	15%	4.7	17%	6.1	21%
Development services	1.0	3%	2.7	10%	2.9	10%
Total*	\$33.9	100%	\$27.9	100%	\$28.5	100%

\* Differences due to rounding.

(a) Revenues reported with maintenance revenue in fiscal 1995.

### Interim Results

Revenue for the three months ending January 31, 1996 reached \$9.2 million, a 20% increase over \$7.6 million for the same period in 1995. Net income for the quarter was \$222,000, compared to \$98,000 for the same period a year ago.

- Product license revenues increased 26% over the same period last year, led by a 57% increase in *WorkStream DFS* product sales.
- Significant orders were received from Burr-Brown Corporation, Hyundai Electronics, Lederle Pharmaceuticals and National Semiconductor.

### Market Financials

One hundred percent of Consilium's revenue is derived from the discrete and process manufacturing industries. Fiscal 1995 revenue was derived approximately as follows:

Semiconductor and electronics.....	69%
Health care products and chemicals.....	27%
Other.....	4%
	100%

A majority of Consilium's domestic customers are Global Fortune 500 companies and include 5 of the 10 largest aerospace firms, 4 of the 10 largest chemical manufacturers, 11 of the 25 largest electronics companies and 10 of the 20 largest pharmaceutical firms worldwide.

The *WorkStream DFS* product line is marketed to manufacturers of semiconductors, complex electronics such as disk drives and flat panel displays, and aerospace products.

The *FlouStream* product line is targeted at research and development and manufacturing operations in the pharmaceutical, medical device and specialty chemical (fibers, paints, resins, plastics and film) industries.

### Geographic Markets

Approximately 67% of Consilium's fiscal 1995 revenue was derived from North America, 18% from Europe and 15% from Asia/Pacific Rim.

A three-year geographic source of revenue summary follows:

**Consilium, Inc.**  
**Three-Year Source of Revenue Summary**  
 (\$ Millions)

Geographic Area	Fiscal Year					
	10/95		10/94		10/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
North America	\$22.7	67%	\$19.2	69%	\$20.8	73%
Europe	6.1	18%	4.9	18%	5.1	18%
Asia/Pacific Rim	5.1	15%	3.8	13%	2.6	9%
Total	\$33.9	100%	\$27.9	100%	\$28.5	100%

## Employees

As of October 31, 1995, Consilium had 210 full-time employees, segmented as follows:

Sales/marketing.....	61
Product development and maintenance .....	71
Services and support.....	46
Management, administration, and finance.....	19
Other .....	<u>13</u>
	210

The company currently has 208 employees.

## Key Products and Services

Consilium's *WorkStream* and *FlowStream* product lines monitor, measure, and control the five essential elements of manufacturing—materials, equipment, personnel, specifications and facilities—throughout the production process.

### *WorkStream DFS Products*

The *WorkStream DFS* product family consists of multiple software products, *WorkStream* and *WorkStream Open*; a set of 24 integrated software modules for managing the execution of a production plan for discrete lot-based industries; a software communications "message bus"; and three functional servers providing additional capabilities in a distributed, client/server environment.

- The 24 modules are grouped into four benefits or solutions areas: tracking; quality and engineering management; planning; and process control and automation. The current application servers provide capabilities primarily in the areas of automation and quality.
- The *WorkStream* and *WorkStream Open* software products are written in COBOL and C and are principally licensed to run on Digital VAX computers under VMS with Oracle CODASYL DBMS databases (*WorkStream*) or HP 9000 computers running under HP-UX UNIX and the Informix relational database (*WorkStream Open*). Plans include porting *WorkStream* to Digital's Alpha platform running Open VMS.
- The *WorkStream* and *WorkStream Open* systems' modules are integrated through a common database, permitting all modules to obtain information simultaneously from a single data source and through a common interface. The systems are designed to allow distributed application processing in the Digital cluster mode and in a client/server mode.
- The *WorkStream DFS* servers introduced in 1995 are object-oriented applications and run in a UNIX-based environment. They are designed to operate in a distributed software environment and connect to an ISIS message bus, using standard communication protocols to talk to either *WorkStream* or *WorkStream Open*. They have been developed in SmallTalk and use Informix relational database software. *WorkStream DFS* servers are currently available to run on HP 9000 computers under HP-UX.
- During fiscal 1996, Consilium plans to integrate *WorkStream DFS* with various order processing, financial and ERP systems from Oracle. The resulting system will be marketed as a total supply chain management solution to the semiconductor industry.

To date, *WorkStream DFS* products have been purchased by more than 100 companies

for 230 sites in 20 countries. Approximately one-third of the company's existing customers have installed *WorkStream* at multiple sites.

#### *FlowStream Products*

The *FlowStream* product is designed for companies that employ batch process styles of manufacturing and its presently targeted at the pharmaceutical and chemical industries.

- *FlowStream* addresses six benefits or solution areas: batch operations tracking and control; inventory or materials management; quality management; document management; planning and scheduling; and costing.
- *FlowStream* tracks work-in-process activity by work order, down through each operation or step, whether automated or manual.
- *FlowStream* is written in C++ and runs on Digital VAX and Hewlett-Packard HP-UX systems and Rdb and Oracle relational databases.
- Interfacing tools within *FlowStream* allow integration with other manufacturing applications such as Enterprise Resource Planning (ERP), Laboratory Information Management Systems (LIMS) and automation controllers.

To date, *FlowStream* products have been purchased by 18 companies for 31 sites in eight countries.

#### *Maintenance and Support*

Consilium provides maintenance, training, installation support and on-site implementation and integration consultants for its *WorkStream DFS* and *FlowStream* product lines.

Maintenance, which consists of product enhancements and technical support, may be purchased after the expiration of the warranty period, which is currently 90 days, and is automatically renewable annually thereafter.

- Annual maintenance fees are generally 15% of the list price of the modules being maintained and are subject to a Consumer Price Index-based inflator.
- Product support services are provided worldwide by a combination of local office technical support and a Customer Response Center.

Consilium also offers training and consulting services through its Professional Services organization.

- Training classes are regularly scheduled at regional centers or customer locations.
- Consulting services cover preselling analysis, installation, project management, customization and application integration.
- Time-and-material-based services are also offered to augment Consilium's consulting services and to meet specialized requirements.

#### **Clients**

A sample of clients by product line follows:

*WorkStream*—Read-Rite Corporation, Seagate Microelectronics, NCR, South Carolina Research Authority, National Semiconductor, MEMC, Altera, Hitachi Semiconductor, EM Microelectronics, Thesys, Advanced Micro Devices, Digital, Philips NV, United Microelectronics, Harris Semiconductor, SGS Thomson, and Siemens.

*WorkStream Open*—AMCC, Zilog, Alcatel CIT, Hyundai Electronics Industries, Fluke, LG Semicon, Hewlett-Packard, and Motorola.

*FlowStream*—Baxter Healthcare Corporation, Glaxo, Pharmacia, Rhone-Poulenc Rorer, AZKO Faser AG, Hoechst division of Herberts GmbH, Eastman Chemical, Hercules, Lederle Laboratories, Eli Lilly, Abbott Laboratories, Warner Lambert, Schering Plough, and WL Gore.

### Marketing and Sales

Consilium markets its products through its direct sales force in the U.S., Canada, France, Germany, Japan, Malaysia, Singapore, South Korea, Taiwan and the U.K. The company also uses distributors in Japan, Israel, Italy, and Taiwan.

The sales cycle for a new installation of a *WorkStream DFS* system typically ranges from 9 to 15 months from the initial identification of a qualified potential user to the installation of the software. Sales cycles for *FlowStream* have run from 9 to 18 months.

As a Digital Cooperative Marketing Partner (CMP) and a Hewlett-Packard Independent Software Vendor (ISV), Consilium participates with these hardware companies in a variety of cooperative marketing programs, including joint appearances at trade shows, joint brochures, joint sales seminars and joint sales calls.

### Alliances

In October 1995, Consilium announced an alliance with Avnet Computer, Digital Equipment Corporation and Oracle Corporation to jointly provide an upgrade path for *WorkStream* users to migrate from older Digital VAX systems to Digital's Alpha

platform. When available, the solution will consist of a new version of *WorkStream* running on the Open VMS Alpha operating system, Alpha hardware, Oracle's ODASYL DBMS database and a range of implementation services from Avnet.

In November 1995, Consilium announced a partnership with Oracle to create a total supply chain management solution for the semiconductor industry. The companies will work together to link *WorkStream DFS* software tightly with Oracle's order processing, financial, and enterprise resource planning systems.

Honeywell Industrial Automation and Control is using *FlowStream* for its TotalPlant solution, which integrates production, process, and field management systems.

Consilium has a strategic partnership with systems integrator ITP Systems to provide integrated automation solutions to semiconductor manufacturers in the U.S. and Europe.

In December 1995, Consilium outsourced its computer data center and telecommunications services to EDS under a 10-year agreement.

### Competitors

Consilium's primary competition comes from the management information systems departments of its largest potential customers, who have the capability to develop software internally.

Direct competition in the semiconductor market also comes from Promis, Inc, which is also a Digital CMP participant.

Consilium anticipates increased competition from other vendors, including FASTech

(discrete manufacturing market) and SAP and Incode (pharmaceutical market).

### **INPUT Assessment**

Consilium's strengths include its leading edge on the manufacturing execution systems market for management of the plant floor and the expansion of its product lines for open systems environments.

The company's recent, sizable investment in products has further strengthened its position against competition.

Challenges include developing a successful marketing organization, shortening sales cycles and proving its new products in the marketplace. Financially, the company must sustain a return on its four-year investment by continuing to increase the revenues coming from its new products.



## COMPANY PROFILE

---

### **CONCORD COMPUTING CORPORATION**

2525 Horizon Lake Drive  
Suite 120  
Memphis, TN 38133  
(901) 371-8000

Victor M. Tyler, Chairman  
Dan M. Palmer, President and CEO  
Public Corporation, NASDAQ  
Total Employees: 347  
Total Revenue, Fiscal Year End  
9/30/90: \$37,206,327

---

### **The Company**

Concord Computing Corporation provides a range of processing services for the authorization, control, and settlement of transactions of consumers using checks, credit cards, debit cards, and cash cards at supermarkets, truck stops, convenience stores, drug stores, and other retail locations.

- Concord Computing was incorporated in 1970 in Massachusetts. In June 1984, the company made an initial public offering of 400,000 shares of its common stock.

Concord Computing is organized into several business units, most of which operate autonomously:

- Bank Card Services--which include credit card authorization, data capture, and settlement--are provided to retail merchants through EFS, Inc., a wholly owned subsidiary located in Memphis (TN). EFS was acquired by Concord Computing during 1985.
- Check Services--which include check authorization and settlement--are provided to supermarkets and drug store chains by Concord Computing's Retail Service Division located in Chicago.
- Trucking Services--which include cash card and cash forwarding--are provided to trucking firms through Concord Computing's EFS subsidiary.
- EFT Services are provided to financial institutions through Network EFT, Inc. (NEFTI) of Chicago, a majority-owned (57%) subsidiary acquired in 1981.
- Concord Computing also supplies terminal and communications equipment to transaction networks, retailers, and banks.

Fiscal 1990 revenue reached \$37.2 million, a 27% increase over fiscal 1989 revenue of \$29.4 million. Net income rose 46%, from \$3.5 million in fiscal 1989 to \$5.1 million in fiscal 1990. A five-year financial summary follows:

**CONCORD COMPUTING CORPORATION  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	9/90	9/89	9/88	9/87	9/86
Revenue	\$37.2	\$29.4	\$27.2	\$21.7	\$14.2
• Percent Increase from previous year	27%	8%	25%	53%	51%
Income before taxes and extraordinary item	\$8.5	\$5.9	\$4.6	\$1.7	\$0.1
• Percent increase from previous year	44%	28%	178%	*	106%
• Gross margin	23%	20%	17%	8%	1%
Net income	\$5.1	\$3.5	\$2.8	\$1.1	--
• Percent increase from previous year	46%	28%	(a) 158%	(a) *	(a) 103%
• Net margin	14%	12%	10%	5%	--
Earnings per share	\$1.45	\$1.00	\$0.80	\$0.34	\$0.01
• Percent increase from previous year	45%	25%	135%	*	103%

\* Percent change exceeds 1,000%.

(a) Includes tax benefits from net operating loss carryforwards of \$24,000, \$165,000, and \$56,000 for fiscal 1988, 1987, and 1986, respectively.

Increases in net income during fiscal 1990 were due to increased revenues and improved profit margins in the Bank Card Services, Trucking Services, and Check Services areas.

- The growth was a result of an increase in revenue of 55% in Bank Card Services, 52% in Trucking Services, and 8% in Check Services.
- Increases in revenues were due to additional volume from existing customers and the addition of new customers in Bank Card and Trucking Services. The increase in the number of customers was achieved by increasing personnel in the telemarketing group for Bank Card and Trucking Services, which

was the major reason selling, general, and administrative expenses increased 24%.

- The company has been able to improve profit margins due to its ability to process an increased volume of transactions without incurring additional fixed costs.

Revenue for the three months ending December 31, 1990 reached \$11.3 million, a 28% increase over \$8.8 million for the same period in 1989. Net income rose 58%, from \$1.2 million to \$1.9 million.

As of September 30, 1990, Concord Computing had 347 full- and part-time employees, compared to 302 employees at the end of fiscal 1989. Employees are segmented approximately as follows:

Engineering and technical	18
Manufacturing and operations	199
Sales and administration	<u>130</u>
	347

### Key Products and Services

Approximately 95% of Concord Computing's fiscal 1990 revenue was derived from the company's various processing services. The remaining 5% of revenue was derived from sales of terminals and communication equipment.

A three-year summary of source of revenue by business unit follows:

#### CONCORD COMPUTING CORPORATION THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR					
	9/90		9/89		9/88	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Bank Card Services	\$16.9	45%	\$10.7	36%	\$8.2	30%
Check Services	7.8	21%	7.3	25%	6.8	25%
Trucking Services	7.4	20%	5.1	17%	4.6	17%
EFT Services	3.3	9%	4.0	14%	4.1	15%
Terminal Products	1.8	5%	2.3	8%	3.5	13%
<b>TOTAL</b>	<b>\$37.2</b>	<b>100%</b>	<b>\$29.4</b>	<b>100%</b>	<b>\$27.2</b>	<b>100%</b>

EFS, Inc., a wholly owned subsidiary of Concord Computing, provides bank credit card authorization, sales data capture, and settlement processing services for VISA, MasterCard, Discover, and American Express transactions at retail points of sale.

- The company places electronic terminals at retail merchant locations to process credit sales transactions, including daily payment to the merchant.
- When a consumer makes a purchase at a retailer, the consumer's card-issuing bank reimburses EFS the next day for all transactions authorized, less an interchange fee. EFS then reimburses the merchants, less a discount fee. EFS also receives revenue from the rental of terminal equipment.
- Bank Card Services are currently used by over 18,000 retailers nationwide, compared to 10,000 retailers a year ago.
- During 1988, a long-term agreement was reached for the processing of Sears' Discover Card transactions.

The Retail (Check) Services Division authorizes the cashing of checks by consumers in supermarkets and drug store chains, primarily in the Midwest and West.

- During 1988, the company renewed long-term contracts with two dominant supermarket chains in Chicago, including Concord Computing's largest single customer. The company also completed the installation of service for the two largest supermarket chains in St. Louis and began installing service in the Kansas City market.

Trucking Services allow truck drivers to transact the purchase of fuel and services and receive cash advances of up to \$100 at any of over 4,000 authorized truck stops nationwide.

- Trucking companies are issued plastic cards and checks by Concord Computing's EFS subsidiary. Each time a truck driver gets cash, fuel, or services, EFS gives an approval and records the transaction. Truck stops are reimbursed daily by EFS.
- Concord Computing, through EFS, receives fees from the truck stops and trucking companies for these transactions.
- The trucking companies also access EFS's computers for data about their drivers.

EFT Services are supplied by Concord Computing's Network EFT, Inc. subsidiary. These services are used by financial institutions--such as banks, savings and loan associations, and credit unions--to make deposit and withdrawal services available to customers at supermarkets and convenience stores.

- Services typically include cash withdrawals from checking and savings accounts, deposit-taking, balance inquiries, and cash advances.
- During fiscal 1990, Concord Computing processed transactions for customers of 798 financial institutions through terminals located in 519 supermarkets and convenience stores, compared to fiscal 1989, when the company processed 11 million transactions for customers of 460 financial institutions through terminals located in 520 supermarkets and convenience stores.

Concord Computing designs, develops, and contracts with manufacturers to build the LINX family of terminal products and communication equipment for use in transaction processing networks. The company sells these products to financial institutions, supermarket chains, retailers, data processing companies, regional electronic funds transfer networks, and third-party processors.

### **Industry Markets**

Approximately 66% of Concord Computing's fiscal 1990 revenue was derived from the retail industry, 20% from the trucking industry, and 9% from the banking and finance industry. The remaining 5% of revenue was derived from terminal product sales to a range of industries.

In fiscal 1990, 1989, and 1988, one customer, which holds a 37% ownership in NEFTS, accounted for 9%, 11%, and 11%, respectively, of revenues.

### **Geographic Markets**

One hundred percent of Concord Computing's revenue is derived from the U.S.

In addition to its headquarters in Memphis (TN), the company has sales/field offices in Elk Grove (IL), Independence and St. Louis (MO), and Aurora (CO).

Since 1988, Concord Computing has had a royalty and license fee arrangement with a Korean company granting it an exclusive license to manufacture and sell specified cash dispensing system products in Korea and a non-exclusive license to sell the products

worldwide, except in the U.S. To date, Concord Computing has received \$600,000 in license fees from this agreement.

**Computer  
Hardware**

Concord Computing's Memphis data center has Stratus systems installed for Trucking and Bank Card Services. A center in Elk Grove (IL) has a Tandem system in support of the company's Check Services and EFT Services.

## COMPANY PROFILE

---

### **CONCORD COMPUTING CORPORATION**

3665 Perkins Road  
Suite 8  
Memphis, TN 38118  
(901) 366-2100

Victor M. Tyler, Chairman  
Dan M. Palmer, President and CEO  
Public Corporation, NASDAQ  
Total Employees: 302  
Total Revenue, Fiscal Year End  
9/30/89: \$29,437,282

---

### **The Company**

Concord Computing Corporation provides a range of processing services for the authorization, control, and settlement of transactions of consumers using checks, credit cards, debit cards, and cash cards at supermarkets, truck stops, convenience stores, drug stores, and other retail locations.

- Concord Computing was incorporated in 1970 in Massachusetts. In June 1984, the company made an initial public offering of 400,000 shares of its common stock.

Concord Computing is organized into several business units, most of which operate autonomously:

- Bank Card Services--which include credit card authorization, data capture, and settlement--are provided to retail merchants through EFS, Inc., a wholly owned subsidiary located in Memphis (TN). EFS was acquired by Concord Computing during 1985.
- Check Services--which include check authorization and settlement--are provided to supermarkets and drug store chains by Concord Computing's Retail Service Division located in Chicago.
- Trucking Services--which include cash card and cash forwarding--are provided to trucking firms through Concord Computing's EFS subsidiary.
- EFT Services are provided to financial institutions through Network EFT, Inc. (NEFTI) of Chicago, a majority-owned (57%) subsidiary acquired in 1981.
- Concord Computing also supplies terminal and communications equipment to transaction networks, retailers, and banks.

Fiscal 1989 revenue reached \$29.4 million, an 8% increase over fiscal 1988 revenue of \$27.2 million. Net income rose 28%, from \$2.8 million in fiscal 1988, to \$3.5 million in fiscal 1989. A five-year financial summary follows:

**CONCORD COMPUTING CORPORATION  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/89	9/88	9/87	9/86	9/85
Revenue	\$29,437	\$27,218	\$21,716	\$14,170	\$9,411
• Percent increase from previous year	8%	25%	53%	51%	26%
Income (loss) before taxes and extraordinary item	\$5,891	\$4,607	\$1,657	\$79	\$(1,314)
• Percent increase (decrease) from previous year	28%	178%	*	106%	(223%)
• Gross margin	20%	17%	8%	1%	--
Net income (loss)	\$3,528	\$2,763 (a)	\$1,071 (a)	\$30 (a)	\$(888)
• Percent increase (decrease) from previous year	28%	158%	*	103%	(246%)
• Net margin	12%	10%	5%	--	--
Earnings (loss) per share	\$1.00	\$0.80	\$0.34	\$0.01	\$(0.31)
• Percent increase (decrease) from previous year	25%	135%	*	103%	(215%)

\* Percent change exceeds 1,000%.

(a) Includes tax benefits from net operating loss carryforwards of \$24,000, \$165,000, and \$56,000 for fiscal 1988, 1987, and 1986, respectively.

Increases in net income during fiscal 1989 were due to improved profit margins in the Bank Card Services, Trucking Services, and Check Services areas.

- The growth was a result of an increase in revenue of 31% in Bank Card Services, 11% in Trucking Services, and 7% in Check Services and greater efficiencies overall.

Revenue for the six months ending March 31, 1990 reached \$17.4 million, a 25% increase over \$13.9 million for the same period in

1989. Net income rose 37%, from \$1.6 million to nearly \$2.2 million.

- Revenue increases in Bank Card Services and Trucking Services were partially offset by declines in EFT Services revenue due to the loss of a major customer.

As of September 30, 1989, Concord Computing had 302 full- and part-time employees, compared to 267 employees at the end of fiscal 1988. Employees are segmented approximately as follows:

Engineering and technical	34
Manufacturing and operations	161
Sales and administration	<u>107</u>
	302

#### Key Products and Services

Approximately 92% of Concord Computing's fiscal 1989 revenue was derived from the company's various processing services. The remaining 8% of revenue was derived from sales of terminals and communication equipment.

A three-year summary of source of revenue by business unit follows:

#### CONCORD COMPUTING CORPORATION THREE-YEAR SOURCE OF REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR					
	9/89		9/88		9/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Bank Card Services	\$10.7	36%	\$8.2	30%	\$6.1	28%
Check Services	7.3	25%	6.8	25%	4.8	22%
Trucking Services	5.1	17%	4.6	17%	4.1	19%
EFT Services	4.0	14%	4.1	15%	3.5	16%
Terminal Products	2.3	8%	3.5	13%	3.2	15%
<b>TOTAL</b>	<b>\$29.4</b>	<b>100%</b>	<b>\$27.2</b>	<b>100%</b>	<b>\$21.7</b>	<b>100%</b>

EFS, Inc., a wholly owned subsidiary of Concord Computing, provides bank credit card authorization, sales data capture, and settlement processing services for VISA, MasterCard, Discover, and American Express transactions at retail points-of-sale.

- The company places electronic terminals at retail merchant locations to process credit sales transactions, including daily payment to the merchant.
- When a consumer makes a purchase at a retailer, the consumer's card-issuing bank reimburses EFS the next day for all transactions authorized, less an interchange fee. EFS then reimburses the merchants, less a discount fee. EFS also receives revenue from the rental of terminal equipment.
- Bank Card Services are used by over 10,000 retailers nationwide.
- During 1988, a long-term agreement was reached for the processing of Sears' Discover Card transactions.

The Retail Services Division authorizes the cashing of checks by consumers in supermarkets and drug store chains, primarily in the Midwest and West.

- During 1988, the company renewed long-term contracts with two dominant supermarket chains in Chicago, including Concord Computing's largest single customer. The company also completed the installation of service for the two largest supermarket chains in St. Louis and began installing service in the Kansas City market.

Trucking Services allow truck drivers to transact the purchase of fuel and services and receive cash advances of up to \$100 at any of over 3,500 authorized truck stops nationwide.

- Trucking companies are issued plastic cards and checks by Concord Computing's EFS subsidiary. Each time a truck driver gets cash, fuel, or services, EFS gives an approval and records the transaction. Truck stops are reimbursed daily by EFS.
- Concord Computing, through EFS, receives fees from the truck stops and trucking companies for these transactions.
- The trucking companies also access EFS's computers for data about their drivers.

EFT Services are supplied by Concord Computing's Network EFT, Inc. subsidiary. These services are used by financial institutions--such as banks, savings and loan associations, and credit unions--to make deposit and withdrawal services available to customers at supermarkets and convenience stores.

- Services typically include cash withdrawals from checking and savings accounts, deposit-taking, balance inquiries, and cash advances.
- During fiscal 1989, Concord Computing processed 11 million transactions for customers of 460 financial institutions through terminals located in 520 supermarkets and convenience stores. During fiscal 1988, Concord Computing processed 12 million transactions for customers of 390 financial institutions.

Concord Computing designs, develops, and contracts with manufacturers to build the LINX family of terminal products and communication equipment for use in transaction processing networks. The company sells these products to financial institutions, supermarket chains, retailers, data processing companies, regional electronic funds transfer networks, and third-party processors.

**Industry Markets**

Approximately 61% of Concord Computing's fiscal 1989 revenue was derived from the retail industry, 17% from the trucking industry, and 14% from the banking and finance industry. The remaining 8% of revenue was derived from terminal product sales to a range of industries.

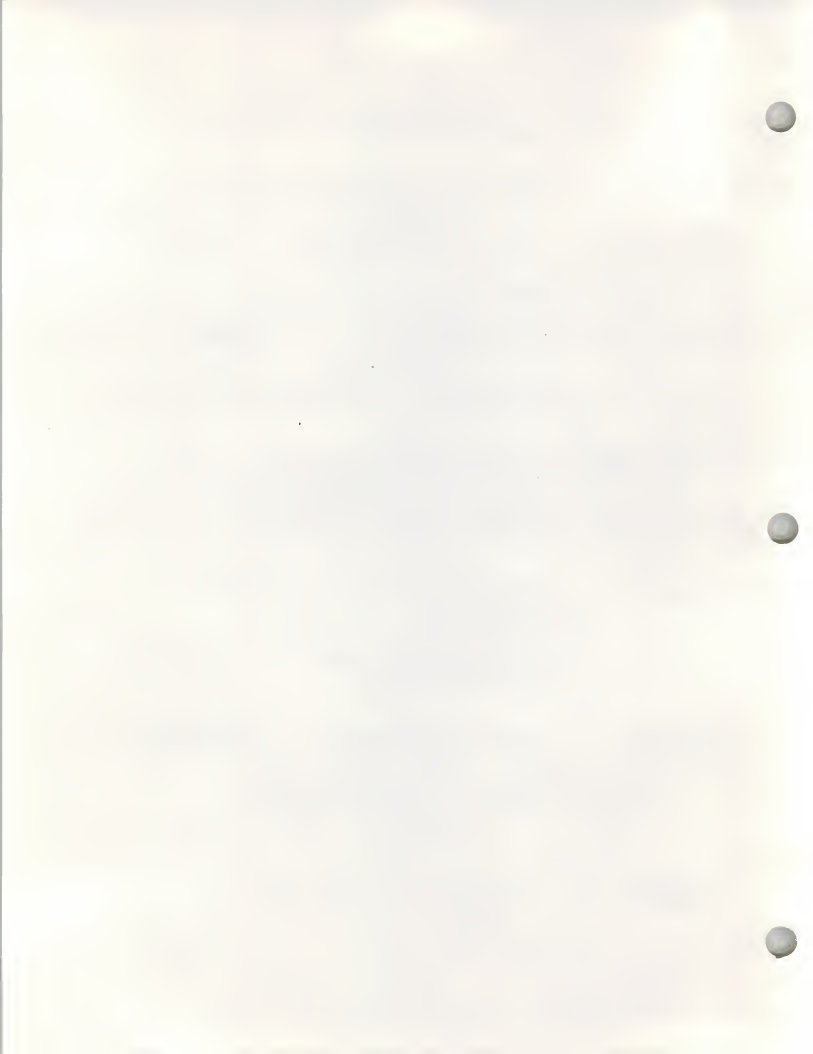
**Geographic Markets**

One hundred percent of Concord Computing's revenue is derived from the U.S.

In addition to its headquarters in Memphis (TN), the company has sales offices in Elk Grove Village (IL), St. Louis (MO), Aurora (CO), and Woburn (MA).

**Computer Hardware**

Concord Computing's Memphis data center has Stratus systems installed for Trucking and Bank Card Services. A center in Elk Grove Village (IL) has a Tandem system in support of the company's Check Services and EFT Services.



## COMPANY PROFILE

---

### **CONCORD COMPUTING CORPORATION**

500 West Cummings Park  
Suite 3500  
Woburn, MA 01810  
(617) 933-8910

Victor M. Tyler, Chairman and CEO  
Public Corporation, NASDAQ  
Total Employees: 267  
Total Revenue, Fiscal Year End  
9/30/88: \$27,218,152

---

### **The Company**

Concord Computing Corporation provides a range of processing services for the authorization, control, and settlement of transactions of consumers using checks, credit cards, debit cards, and cash cards at supermarkets, truck stops, convenience stores, drug stores, and other retail locations.

- Concord Computing was incorporated in 1970 in Massachusetts. In June 1984, the company made an initial public offering of 400,000 shares of its common stock.

Concord Computing is organized into several business units, most of which operate autonomously:

- Bank Card Services--which include credit card authorization, data capture, and settlement--are provided to retail merchants through EFS, Inc., a wholly owned subsidiary located in Memphis (TN). EFS was acquired by Concord Computing during 1985.
- Check Services--which include check authorization and settlement--are provided to supermarkets and drug store chains by Concord Computing's Retail Service Division located in Chicago.
- Trucking Services--which include cash card and cash forwarding--are provided to trucking firms through Concord Computing's EFS subsidiary.
- EFT Services are provided to financial institutions through Network EFT, Inc. (NEFTI) of Chicago, a majority-owned (57%) subsidiary acquired in 1981.
- Concord Computing also supplies terminal and communications equipment to transaction networks, retailers, and banks.

Fiscal 1988 revenue reached \$27.2 million, a 25% increase over fiscal 1987 revenue of \$21.7 million. Net income rose 158%, from \$1.1 million in fiscal 1987, to nearly \$2.8 million in fiscal 1988. A five-year financial summary follows:

**CONCORD COMPUTING CORPORATION  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	9/88	9/87	9/86	9/85	9/84
Revenue	\$27,218	\$21,716	\$14,170	\$9,411	\$7,477
• Percent Increase from previous year	25%	53%	51%	26%	38%
Income (loss) before taxes and extraordinary item	\$4,607	\$1,657	\$79	\$(1,314)	\$1,068
• Percent Increase (decrease) from previous year	178%	*	106%	(223%)	87%
Net income (loss)	\$2,763	\$1,071	\$30	\$(888)	\$609
• Percent increase (decrease) from previous year	158%	*	103%	(246%)	14%
Earnings (loss) per share	\$0.80	\$0.34	\$0.01	\$(0.31)	\$0.27
• Percent increase (decrease) from previous year	135%	*	103%	(215%)	--

\* Percent change exceeds 1,000%.

- (a) Includes tax benefits from net operating loss carryforwards of \$24,000, \$165,000, and \$56,000 for fiscal 1988, 1987, and 1986, respectively.

Growth during fiscal 1988 was attributed primarily to a 33% increase in Bank Card Services sales, a 44% increase in Check Services revenue, and a 21% increase in EFT Services revenue.

Net earnings increased 158% in fiscal 1988 due to improved margins in the Check Services, Bank Card Services, and Terminal Products areas. These three operations turned 66% of their aggregate increase in sales into divisional profit.

- The Check Services improvement was due to larger volume and greater efficiency.
- Bank Card Services benefited from increased volume and lower

selling costs.

- Terminal Products reduced overhead and sold a more customized product at better margins.

Revenue for the three months ending December 31, 1988 reached nearly \$7 million, a 3% increase over \$6.8 million for the same period in 1987. Net income rose 24%, from \$634,713 (9.3% of sales) to \$790,129 (11.3% of sales).

As of September 30, 1988, Concord Computing had 267 full- and part-time employees, compared to 223 employees at the end of fiscal 1987. Employees are segmented approximately as follows:

Engineering and technical	40
Manufacturing and operations	187
Sales and administration	<u>40</u>
	267

#### **Key Products and Services**

Approximately 87% of Concord Computing's fiscal 1988 revenue was derived from the company's various processing services. The remaining 13% of revenue was derived from sales of terminals and communication equipment.

A three-year summary of source of revenue by business unit follows:

**CONCORD COMPUTING CORPORATION  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	9/88		9/87		9/86	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Bank Card Services	\$8.2	30%	\$6.1	28%	\$2.5	18%
Check Services	6.8	25%	4.8	22%	4.3	30%
Trucking Services	4.6	17%	4.1	19%	3.8	27%
EFT Services	4.1	15%	3.5	16%	2.7	19%
Terminal Products	3.5	13%	3.2	15%	0.9	6%
<b>TOTAL</b>	<b>\$27.2</b>	<b>100%</b>	<b>\$21.7</b>	<b>100%</b>	<b>\$14.2</b>	<b>100%</b>

EFS, Inc., a wholly owned subsidiary of Concord Computing, provides bank credit card authorization, sales data capture, and settlement processing services for VISA, MasterCard, Discover, and American Express transactions at retail points-of-sale.

- The company places electronic terminals at retail merchant locations to process credit sales transactions, including daily payment to the merchant.
- When a consumer makes a purchase at a retailer, the consumer's card-issuing bank reimburses EFS the next day for all transactions authorized, less an interchange fee. EFS then reimburses the merchants, less a discount fee. EFS also receives revenue from the rental of terminal equipment.
- Bank Card Services are used by over 6,000 retailers nationwide.
- During 1988, a long-term agreement was reached for the processing of Sears' Discover Card transactions.

The Retail Services Division authorizes the cashing of checks by consumers in supermarkets and drug chains, primarily in the Midwest and West.

- During 1988, the company renewed long-term contracts with two dominant supermarket chains in Chicago, including Concord Computing's largest single customer. The company also completed the installation of service for the two largest supermarket chains in St. Louis and began installing service in

the Kansas City market.

Trucking Services allow truck drivers to transact the purchase of fuel and services and receive cash advances of up to \$100 at any of over 3,500 authorized truck stops nationwide.

- Trucking companies are issued plastic cards and checks by Concord Computing's EFS subsidiary. Each time a truck driver gets cash, fuel, or services, EFS gives an approval and records the transaction. Truck stops are reimbursed daily by EFS.
- Concord Computing, through EFS, receives fees from the truck stops and trucking companies for these transactions.
- The trucking companies also access EFS's computers for data about their drivers.

EFT Services are supplied by Concord Computing's Network EFT, Inc. subsidiary. These services are used by financial institutions--such as banks, savings and loan associations, and credit unions--to make deposit and withdrawal services available to customers at supermarkets and convenience stores.

- Services typically include cash withdrawals from checking and savings accounts, deposit-taking, balance inquiries, and cash advances.
- During fiscal 1988, Concord Computing processed 12 million transactions for customers of 390 financial institutions through terminals located in 590 supermarkets and convenience stores. During fiscal 1987, Concord Computing supplied these services to 250 financial institutions.

Concord Computing designs, develops, and contracts with manufacturers to build the LINX family of terminal products and communication equipment for use in transaction processing networks. The company sells these products to financial institutions, supermarket chains, retailers, data processing companies, regional electronic funds transfer networks, and third-party processors.

- Approximately 20% of shipments are to customers of the company's Check Services.
- In October 1988, Concord Computing entered into a contract with Manufacturing Solutions, Inc. (MSI) whereby MSI will manufacture certain transaction terminals designed by Concord Computing.

- During fiscal 1988, Concord Computing entered into a seven-year Technical License Agreement with GoldStar Co., Ltd. of Seoul (South Korea). The agreement granted GoldStar an exclusive license to manufacture and sell specified cash dispensing system products in Korea. Concord Computing also granted GoldStar a nonexclusive license to sell the specified products worldwide, except in the U.S.

**Industry Markets**

Approximately 55% of Concord Computing's fiscal 1988 revenue was derived from the retail industry, 17% from the trucking industry, and 15% from the banking and finance industry. The remaining 13% of revenue was derived terminal product sales to a range of industries.

**Geographic Markets**

One hundred percent of Concord Computing's revenue is derived from the U.S.

In addition to its headquarters in Woburn (MA), the company has sales offices in Elk Grove Village (IL), St. Louis (MO), Aurora (CO), and Memphis (TN).

**Computer Hardware**

Concord Computing maintains the following data centers for its various processing services:

- The Elk Grove (IL) data center has a Tandem system in support of the company's Check Services and EFT Services.
- The Memphis (TN) data center has Stratus systems installed for Trucking and Bank Card Services.

## COMPANY HIGHLIGHT

### CONCORD COMPUTING CORPORATION

7 Alfred Circle  
Bedford, MA 01730  
(617) 275-1730

Edward S. Greaves, President  
Private  
Total employees: 80  
Total revenues fiscal year end  
9/30/78: \$5,000,000 approximately  
Computer services revenues:  
\$2,000,000\*

---

### THE COMPANY

- Concord Computing Corporation (CCC) became a Massachusetts corporation in 1969 as a computer services company. Now, over half of its revenues are generated by the manufacture of specialized financial terminals.
  - CCC began offering credit authorization and then self-service check authorization services, which in turn led to development of credit authorization and electronic funds transfer (EFT) terminals.
  - Initially an adjunct to the company's computer services offerings, the terminals have been CCC's major product for the past three years.
  - Computer services are now provided to existing customers, primarily at the maintenance level.
- Management states that CCC is profitable.

### KEY PRODUCTS AND SERVICES

- One hundred percent of computer services revenues are generated by remote computing services in the inquiry/response mode.
  - CCC provides credit card purchase and check approval to about eight retail store users. These retailers issue and manage their own private label charge card services.
  - The on-line, proprietary credit files are maintained by CCC's users. The transaction files are updated automatically when sales data are entered by the retail sales clerks.
  - Users typically have a computer-generated audio response hookup which incorporates AT&T touch-tone telephones or Concord terminals. (Manufacture of this model of CCC terminals has been discontinued).
  - A few users also send tapes to CCC for batch-processed accounts receivables and file updates.
- Upon request, CCC will occasionally develop custom software or turnkey systems. These services generated a negligible portion of revenues in fiscal 1978. One such system was the SecurityService System developed by CCC in 1976 for the Security Pacific National Bank (SPNB), Los Angeles, California.

\* INPUT estimate

## COMPANY HIGHLIGHT/CONCORD COMPUTING CORPORATION

- CCC developed, briefly operated the SPNB system, and maintained the terminals until very recently. Operation has been turned over to SPNB according to plan.
- The Concord Model 750 Transaction terminal is used in the SPNB system. These customer-operated terminals are used for check verification at Alpha Beta food stores throughout California. The customer places a SecurityService card and his check into the terminal and enters the appropriate data as instructed on the terminal. The checks are verified on an exception file basis.
- Computer equipment sales, over half of fiscal 1978 revenues, were generated primarily by EFT terminals and related equipment.
  - About 2,000 Concord terminals have been purchased and installed by commercial banks and savings and loan institutions.
  - Terminals range in price from \$1,500 to \$2,500.
  - Concord terminals compete most directly with IBM 3600 series (primarily the 3606 and 3608 models), NCR, and TRW's FSD terminals.
  - CCC's product line of terminals and related equipment include:
    - The Concord 750 Transaction Terminal is designed to handle point-of-sale and electronic funds transfer activities, including check authorizations, deposits, withdrawals, transfers, and credit card purchases. The 750 does not actually accept deposits or disperse cash, but it can print authorization for handling by store employees. Introduced in 1975, the 750 can be used by customers as well as store personnel.
    - The Concord 770 Transaction Terminal offers banking services, such as check approvals, credit card purchases or deposits, and complex financial transactions which involve multiple document printing. Like the 750, the 770 includes a microprocessor, memory, keyboard, display panel, and magnetic stripe card reader.
    - The 800 Modular Transaction terminal is designed to be easily expanded. It can start as a basic keyboard/display authorization terminal and expand to a multi-document printing terminal with communications capability.
    - The Concord Communication Control Module is a microprocessor-based controller/concentrator that links Concord terminals and high speed communications lines. It can concentrate up to four 1200 bps lines into one 4800 bps line.
    - The Concord 700 Journal and Administrative Printer maintains a continuous, consolidated printed record to all on-line terminals transactions and administrative messages from the host computer system. One 700 Printer supports up to six Concord terminals at one location.

## COMPANY HIGHLIGHT/CONCORD COMPUTING CORPORATION

### APPLICATIONS AND INDUSTRY MARKETS

- Specialty processing services to provide credit inquiry and check authorization services for the retail distribution industry generate 100% of computer services revenues.
- Computer equipment revenues are generated by credit authorization and financial applications for retail and banking industries.
- Retail services users include Jordan Marsh; Shreve, Crump, and Lowe; and Jewel Food Stores.
- Financial equipment users include Honolulu Federal Savings, which has a deposit arrangement with a food store; Hollywood Federal Savings & Loan; Michigan National Bank; Central Trust Co.; Security Pacific National Bank; South Carolina National Bank; and Government Employees Credit Union, San Antonio.

### GEOGRAPHIC MARKETS

- Users of CCC's computer services are located throughout the U.S. but tend to be concentrated in the Middle Atlantic, East North Central, and New England regions.
- Terminals manufactured by CCC are installed in the following states:
  - California
  - Florida
  - Hawaii
  - Illinois
  - Maine
  - Michigan
  - Nebraska
  - New York
  - Ohio
  - South Carolina
  - Tennessee
  - Texas
  - Wisconsin
- Branch offices are located in California, Boston, and Chicago.

## COMPANY HIGHLIGHT/CONCORD COMPUTING CORPORATION

### COMPUTER HARDWARE AND SOFTWARE

- Three Honeywell 316 CPUs are used to provide processing services.
- Users in Chicago and Massachusetts employ the early model Concord terminals and are linked to the CCC CPU by one 1200 baud private line.

## COMPANY BRIEF

Primary Industry-Specific Market: Manufacturing

### **Concord Data Systems, Inc.**

397 William Street  
Marlboro, MA 01752  
(617) 460-0808

CEO: Kenneth Miller, Chairman & President  
Private Company  
Founded: 1981

Employees: 70 (7/86)  
Revenue (FYE 12/31/85): \$6-10 million\*

-----

**The Company:** Sells modems and implements GM/MAP interface

#### **Sources of Revenue:**

- Application Software (45%)
- Sales of modems (55%)

#### **Key Products:**

- Application Software (Utilizes DEC MicroVAX)
  - GM/MAP Protocol
- Hardware Products
  - Modems

#### **Target Industries:**

- Process Manufacturing
- Automobile
- Aerospace
- Steel

#### **Geographic Markets:**

- U.S. (75%) and Non-U.S. (25%)
- Sales Offices: Boston, Los Angeles, Detroit

#### **Significant Events:**

- Signed marketing agreements for European distribution

#### **Other:**

- Developing GM/MAP Protocol for DEC VAX and Honeywell minicomputers
- Sells GM/MAP Interface for DEC MicroVAX minicomputers
- Installed base: 75 GM/MAP networks (7/86)

\*INPUT estimate

October 1986



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

June 1994

## Consilium, Inc.

Chairman: J.J. Golovin  
 President & CEO: T.A. Tomasetti  
 640 Clyde Court  
 Mountain View, CA 94043  
 Phone: (415) 691-6100  
 Fax: (415) 691-6130

Status:	Public
Employees:	235 (10/93)
Revenue:	\$ 28,475,000
Fiscal Year End:	10/31/93

### Key Points

- Consilium is the world's leading supplier of integrated manufacturing execution systems (MES) software and services to discrete and process manufacturers.
- Consilium has committed substantial resources over the past several years to creating a new product (*FlowStream*<sup>®</sup>) for the process manufacturing industry and developing open system versions of its *WorkStream*<sup>®</sup> product—initially developed to run exclusively on proprietary operating systems for DEC

VAX computers. Research and development expenses represented 36% of revenue in fiscal 1993, 34% in 1992 and 26% in 1991.

- In early 1993, Consilium's *WorkStream* product line for discrete manufacturers was made available for Hewlett-Packard's HP 9000 line of UNIX-based computers. Versions are expected to be available on IBM's RS/6000 and DEC's Alpha line of UNIX-based computers by year end. Consilium has renamed its open systems product line *WorkStream Open*.
- In April 1994, *FlowStream* Version 3.1 was released, which completed the offering of capabilities for the pharmaceutical industry. *FlowStream* was also made available on the HP/UX. platform with this release.

- Honeywell Industrial Automation and Control has chosen *FlowStream* as the exclusive MES component for its TotalPlant solution—the first time a process controls company has incorporated MES software into its product. The agreement resulted in \$2.7 million in prepaid license revenues to Consilium for fiscal 1993.

### Company Description

Consilium provides integrated MES software products and associated support services to discrete and process manufacturers. The company's products measure manufacturing performance realtime, providing visibility and control to continuously improve production processes. This enables manufacturers to reduce costs, improve quality, ensure regulatory compliance and achieve just-in-time delivery.

- The *WorkStream* product line, initially developed for semiconductor manufacturers, is now targeted at discrete manufacturers in such industries as semiconductors, electronics and aerospace and defense.
- The *FlowStream* product line, initially developed in cooperation with DEC and introduced during fiscal 1991, complements the company's *WorkStream* product line and extends manufacturing execution capabilities to process manufacturers—specifically pharmaceutical and chemical companies.

Consilium has been a DEC Cooperative Marketing Program (CMP) participant since 1984 and is a Hewlett-Packard Independent Software Vendor (ISV) participant.

Consilium was incorporated in California in October 1978 to provide consulting services and released the first modules of the *WorkStream*

product line during fiscal 1983. The company was reincorporated in Delaware in March 1991.

### Operations and Structure

U.S. offices are in Bedminster (NJ), Blue Bell (PA), Chicago (IL), Dallas (TX), Denver (CO), Irvine (CA), Maitland and Melbourne (FL), Minneapolis (MN), Nashua (NH) and Richmond (VA). A Canadian office is in Oshawa (Ontario).

International offices are in England, France, Germany, Singapore, South Korea, Taiwan and Japan. Consilium also has distributors in Japan, Israel, portions of Western Europe and Southeast Asia.

### Company Strategy

Over three years ago, Consilium launched a strategy of investment to address the changing needs of manufacturers trying to stay competitive in a global marketplace. The company has developed a new open systems version of its flagship *WorkStream* product and created a new product (*FlowStream*) to address additional industries.

- The company expects to have *WorkStream Open* versions for IBM's RS/6000 and DEC's Alpha AXP computers during 1994. Consilium has also released the first UNIX version of *FlowStream* (April 1994 on HP/UX).
- Development continues on a distributed factory system (DFS) to link disparate manufacturing systems—the first use of which will be to integrate new automation capabilities with the *WorkStream* and *WorkStream Open* products for semiconductor customers.

Consilium is now shifting from investing in new products and technologies to sales and marketing efforts. In early fiscal 1994, the company added

Mary Benek as the new vice president of marketing.

### Financials

Fiscal 1993 revenues reached \$28.5 million, a 3% increase over fiscal 1992 revenue of \$27.6

million. Net losses were \$5.3 million, the same as in fiscal 1992. A five-year financial summary follows:

### Consilium, Inc. Five-Year Financial Summary (\$ Millions, except per share data)

Item	Fiscal Year				
	10/93	10/92	10/91	10/90	10/89
Revenue	\$28.5	\$27.6	\$27.4	\$28.9	\$21.6
• Percent change from previous year	3%	1%	(5%)	34%	29%
Income (loss) before taxes	\$(5.0)	\$(5.2)	\$(1.6)	\$4.6	\$3.8
• Percent change from previous year	(4%)	(225%)	(135%)	21%	6%
Net income (loss)	\$(5.3)	\$(5.3)	\$(1.1)	\$3.2	\$2.5
• Percent change from previous year	--	(382%)	(134%)	28%	14%
Earnings (loss) per share	\$(0.75)	\$(0.77)	\$(0.15)	\$0.47	\$0.42
• Percent change from previous year	3%	(413%)	(132%)	10%	--

Consilium management attributes fiscal 1993 results to the following:

- Product license revenues increased 7% primarily due to an agreement executed with Honeywell in the second quarter that accounted for \$2.7 million or 21% of total product revenue.
- Excluding this transaction, product revenue in fiscal 1993 would have decreased 13%, reflecting the continued residual effects of the weak worldwide economy and the immature state of its new products as manufacturers continue to delay capital expenditures.
- Sales to the U.S. aerospace and defense industry and semiconductor and electronics sales in Japan, formerly significant revenue contributors, have decreased sharply following the end of the Cold War and the recession in Japan.
- Consilium has also experienced delays in transitioning from a single product on a proprietary operating system to developing and supporting two products on new, standards-based technology. Consilium expects product revenues may continue to be impacted in the near term as customer purchase decisions continue to be deferred and until additional copies of its WorkStream Open and FlowStream products are used in

full production at sites at which they are installed.

- FlowStream products contributed 47% to total product sales in fiscal 1993 compared to 12% in fiscal 1992. The increase was primarily due to the Honeywell transaction.
- Included in fiscal 1993 product revenues are approximately \$1.5 million of revenue from development contracts. The results of these contracts are expected to become standard products upon completion of the development work.
- Current year product revenue also includes approximately \$943,000 of third-party reporting revenue.
- Product license revenue has been concentrated in a relatively small number of customers and Consilium's products have a high average selling price. During fiscal 1993, the percent of product license revenue derived from Consilium's ten largest customers was about 65%, compared to 44% in fiscal 1992 and 63% in fiscal 1991.
- Total maintenance revenue decreased 3% in fiscal 1993, although *FlowStream* maintenance revenue increased. Deferrals and cancellations on annual renewals of certain customer maintenance agreements during the year were the result of downsizing activities, as well as funding delays experienced by some customers. Consilium expects maintenance revenue associated with its *WorkStream* product to decline somewhat in the near term due to weakness in some of its target industries.
- Professional services revenue increased 6%. Marked decreases in resident-related service

and training revenues were offset by higher custom service and consulting revenues.

Continued net losses were due to the following:

- Cost of revenue rose from \$7.0 million in fiscal 1992 to \$7.8 million in fiscal 1993.
- Research and development expenditures (excluding capitalized amounts) were \$10.2 million (36% of revenue) in fiscal 1993, \$9.4 million (34% of revenue) in fiscal 1992 and \$7.2 million (26% of revenue) in fiscal 1991.
- General and administrative expenses rose to \$3.1 million in fiscal 1993 from \$2.9 million in fiscal 1992 due to additional bad debt write-offs and legal expenses.
- Selling and marketing expenses actually declined during fiscal 1993 to \$12.7 million, from \$13.4 million in fiscal 1992 due primarily to lower salary, travel and office expenses for lower sales headcount levels compared to 1992.

### *Interim Results:*

Revenue for the six months ending April 30, 1994 reached \$14 million, compared to \$14 million for the same period in 1993. Net losses were \$2.9 million, compared to net losses of \$2.2 million for the same period a year ago. Continued investments in product development have significantly impacted results.

### **Market Financials**

One hundred percent of Consilium's revenue is derived from the discrete and process manufacturing industries. Fiscal 1993 revenue was derived approximately as follows:

Semiconductor industry.....	39%
Pharmaceutical and chemicals.....	31%
Electronics.....	15%
Aerospace and defense.....	9%
Commercial Aircraft.....	5%
Other .....	<u>1%</u>
	100%

DEC, principally acting as a systems integrator, accounted for approximately 11% of Consilium's total revenues in fiscal 1993.

A majority of Consilium's domestic customers are Fortune 500 companies and include 25 of the top 50 U.S. electronics manufacturers, 15 of the top 25 U.S. defense contractors and 16 of the top 50 Fortune Global 500 companies.

The *WorkStream* product line is marketed to commercial aircraft, aerospace and defense, semiconductor and electronics manufacturers for

applications including electronics assembly, sheet metal fabrication and the manufacturing of a diverse range of products, including disk drives, silicon wafers, radar systems and navigation systems.

The *FlowStream* product line is targeted at companies in the pharmaceutical and chemical industry.

#### *Revenue Analysis by Product/Service:*

Approximately 77% of Consilium's fiscal 1993 revenue was derived from software and services related to the *WorkStream* product line and 23% from the *FlowStream* product line.

Approximately 45% of fiscal 1993 revenue was derived from software product licenses, 34% from associated maintenance and 21% from professional services. A three-year summary of source of revenue follows:

### Consilium, Inc. Three-Year Source of Revenue Summary (\$ Millions)

Product/Service	Fiscal Year					
	10/93		10/92		10/91	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software products	\$12.8	45%	\$11.9	43%	\$13.6	50%
Maintenance	9.6	34%	9.9	36%	9.1	33%
Professional services	6.1	21%	5.8	21%	4.7	17%
Total	\$28.5	100%	\$27.6	100%	\$27.4	100%

#### **Geographic Markets**

Approximately 73% of Consilium's fiscal 1993 revenue was derived from the U.S., 18% from Europe and 9% from Asia.

A three-year geographic source of revenue summary follows:

**Consilium, Inc.**  
**Three-Year Source of Revenue Summary**  
 (\$ Millions)

Geographic Area	Fiscal Year					
	10/93		10/92		10/91	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S.	\$20.8	73%	\$20.1	73%	\$17.3	63%
Europe	5.1	18%	5.0	18%	6.0	22%
Asia	2.6	9%	2.5	9%	4.1	15%
Total	\$28.5	100%	\$27.6	100%	\$27.4	100%

### Employees

As of October 31, 1993, Consilium had 235 employees, segmented as follows:

Sales/marketing.....	80
Product development and maintenance .....	94
Services and support .....	44
Management, administration and finance.....	17
	235

### Key Products and Services

Consilium's *WorkStream* and *FlowStream* product lines monitor, measure and control the five essential elements of manufacturing—materials, equipment, personnel, specifications and facilities—throughout the production process.

#### *WorkStream Products:*

The *WorkStream* product line consists of 24 integrated software modules for managing the execution of a production plan for discrete lot-based industries.

- The modules, written in COBOL and C, are integrated through a common database

and support tracking, quality and engineering management, planning and process and control and automation applications.

- *WorkStream* software was initially developed to run on DEC VAX computers. The product line has been ported to HP 9000 UNIX-based computers and incorporates several technologies, including client/server architecture, X-Windows, Motif, SQL database and POSIX compliance. Consilium has renamed its ported product *WorkStream Open*. Versions for IBM's RS/6000 AIX and DEC Alpha systems are scheduled for availability during 1994.

*WorkStream* product license fees are based on the modules licensed and the processor size or the number of concurrent users supported.

- The list prices for *WorkStream* products currently range from \$50,000 for a field trial to several million dollars for a major company rollout, depending on module configuration and number of users.

- The average aggregate per-site license fee during fiscal 1993 for a new installation was \$200,000.
- A customer can implement the core *WorkStream* modules for tracking, quality and engineering management with four users for approximately \$30,000 in total license fees. A customer can implement the same core modules on a pilot basis for 16 users for approximately \$70,000.

To date, more than 2,000 modules of *WorkStream* have been installed at more than 280 sites in 20 countries. Approximately one-third of the company's existing customers have installed *WorkStream* at multiple sites.

#### *FlowStream Products:*

The *FlowStream* product line consists of integrated software for managing the execution of a production plan for process manufacturers in pharmaceuticals and chemicals. *FlowStream* is a distributed application that allows users to access and share real-time information.

- The products address tracking and control, quality management, planning and scheduling and open system interfaces.
- *FlowStream* is written in C++ and runs on DEC VAX workstations. It is based on DEC's Network Application Services (NAS) architecture, making it easier to transfer data between *FlowStream* software and other programs used in the manufacturing environment. Consilium released the first UNIX version of *FlowStream* in April of this year.

*FlowStream* product license fees are based on the number of concurrent users supported and the hardware platform used.

#### *Maintenance and Support:*

Consilium provides maintenance, training, installation support and onsite implementation and integration consultants for its *WorkStream* and *FlowStream* product lines.

Maintenance, which consists of product enhancements and technical support, may be purchased after the expiration of the warranty period, which is currently 90 days, and is automatically renewable annually thereafter. Annual maintenance fees are generally 15% of the list price of the modules being maintained and are subject to a Consumer Price Index-based inflator.

Consilium also sells training and customer support services on a time-and-materials basis.

- To date, resident employees have been made available at customer sites for periods ranging from three to 36 months on a fixed monthly fee basis.
- In addition, Consilium offers custom programming services, usually to interface *WorkStream* modules to automated equipment or internal information systems; to develop user specific reports, data entry forms, or bar code entry data capabilities; or to develop limited custom application functions. Custom programming is normally done only to support strategic sales efforts or technology projects.

**Clients**

*WorkStream*—Read-Rite Corporation, Boeing Company, Seagate Microelectronics, NCR, South Carolina Research Authority, the DuPont Company, National Semiconductor, Mietec, MEMC, EM Microelectronics, SP Reifen (Germany), Thesys (Germany), Wacker Siltronic (Germany), Advanced MicroDevices, Alcatel CIT (France, DEC, Intel, Philips NV, SGS Thomson, Siemens

*WorkStream Open*—AMCC, Zilog, Catalyst Semiconductor, Mietec, Alcatel CIT, Hewlett-Packard

*FlowStream*—Baxter Healthcare Corporation, a U.S. division of Glaxo Holdings plc, Pharmacia, Rhone-Poulenc Rorer, AZKO Faser AG, Hoechst division of Herberts GmbH, Eastman Chemical, Hercules, Lederle Laboratories

**Marketing and Sales**

Consilium markets its products through its direct sales force in the U.S., France, Germany, Japan, South Korea, Taiwan and the U.K. The company also uses distributors in Japan, South Korea, Israel, portions of Western Europe and Southeast Asia.

The sales cycle for a *WorkStream* system typically ranges from 9 to 15 months from the initial identification of a qualified potential user to the installation of the software. Sales cycles for *FlowStream* have run from 6 to 12 months.

As a Digital Cooperative Marketing Partner (CMP) and as a Hewlett-Packard Independent Software Vendor (ISV) participant, Consilium participates with these hardware companies in a variety of cooperative marketing programs, including

joint appearances at tradeshow, joint brochures, joint sales seminars and joint sales calls.

**Alliances**

Honeywell Industrial Automation and Control is using *FlowStream* for its TotalPlant solution, which integrates production, process and field management systems.

Consilium has a strategic partnership with systems integrator ITP Systems to provide integrated automation solutions to semiconductor manufacturers in the U.S. and Europe.

**Competitors**

Consilium's primary competition comes from the management information systems departments of its largest potential customers, who have the capability to develop software internally.

Direct competition in the semiconductor market also comes from Promis, Inc, which is also a DEC CMP participant.

Consilium anticipates experiencing increased competition from other vendors, including Texas Instruments and FASTech (discrete market) and IBM (pharmaceutical market).

**INPUT Assessment**

Consilium's strengths include the company's leading edge on the manufacturing execution systems market for management of the plant floor and the expansion of its product lines for open systems environments.

The company's recent, sizable investment in products has further strengthened its position against competition.

**Consilium, Inc.**

**June 1994**

Challenges include developing a successful marketing organization, shortening sales cycles and proving its new products in the marketplace. Financially, the company must achieve a return on its three-year investment by increasing revenues coming from its new products.



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

March 1995

## Consilium, Inc.

**Chairman:** J.J. Golovin  
**President & CEO:** T.A. Tomasetti  
**640 Clyde Court**  
**Mountain View, CA 94043**  
**Phone:** (415) 691-6100  
**Fax:** (415) 691-6130

**Status:** Public  
**Employees:** 191 (10/94)  
**Revenue:** \$ 27,944,000  
**Fiscal Year End:** 10/31/94

### Key Points

- Consilium is the world's leading supplier of integrated manufacturing execution systems (MES) software and services to discrete and process manufacturers.
- Consilium has committed substantial resources over the past several years to creating a new product (*FlowStream*<sup>®</sup>) for the process manufacturing industry and developing open system versions of its *WorkStream*<sup>®</sup> product—initially developed to run exclusively on proprietary operating systems for Digital VAX computers. Research and development expenses

represented 38% of revenue in fiscal 1994, 36% in fiscal 1993 and 34% in 1992.

- In early 1993, Consilium's *WorkStream* product line for discrete manufacturers was made available on Hewlett-Packard's HP 9000 line of UNIX-based computers. During 1994, versions were made available on IBM's RS/6000 and Digital's Alpha line of UNIX-based computers. Consilium has renamed its open systems product line *WorkStream Open*.
- In April 1994, *FlowStream* Version 3.1 was released with enhanced capabilities for the pharmaceutical industry. *FlowStream* was also made available on the HP/UX platform with this release.

- Honeywell Industrial Automation and Control has chosen *FlowStream* as the exclusive MES component for its TotalPlant solution—the first time a process controls company has incorporated MES software into its product. The agreement resulted in \$2.7 million in prepaid license revenues to Consilium in fiscal 1993.
- During the third quarter of fiscal 1994, Consilium announced a worldwide consolidation of its operations and recorded a restructuring charge of \$1.4 million.

### Company Description

Consilium provides integrated MES software products and associated support services to discrete and process manufacturers. The company's products measure manufacturing performance in real-time, providing visibility and control to continuously improve production processes. This enables manufacturers to achieve best practices in areas such as cost, quality, regulatory compliance, service and speed.

- The *WorkStream* product line, initially developed for semiconductor manufacturers, is now targeted at discrete manufacturers in such industries as semiconductors, electronics and aerospace and defense.
- The *FlowStream* product line, initially developed in cooperation with Digital and introduced during fiscal 1991, complements the company's *WorkStream* product line and extends manufacturing execution capabilities to process manufacturers—presently targeted at pharmaceutical and chemical companies.

Consilium has been a Digital Cooperative Marketing Program (CMP) participant since 1984 and is a Hewlett-Packard Independent Software Vendor (ISV) participant.

Consilium was incorporated in California in October 1978 to provide consulting services and released the first modules of the *WorkStream* product line during

fiscal 1983. The company was reincorporated in Delaware in March 1991.

### Operations and Structure

U.S. offices are in Bedminster (NJ), Blue Bell (PA), Chicago (IL), Dallas (TX), Denver (CO), Irvine (CA), Maitland (FL), Minneapolis (MN) and Nashua (NH). A Canadian office is in Oshawa (Ontario).

International offices are in England, Germany, South Korea, Taiwan and Japan. Consilium also has distributors in Japan, Israel, portions of Western Europe and Southeast Asia.

### Company Strategy

More than four years ago, Consilium launched a strategy of investment to address the changing needs of manufacturers trying to stay competitive in a global marketplace. The company has developed a new open systems version of its flagship *WorkStream* product and created a new product (*FlowStream*) to address additional industries.

- Development continues on a distributed factory system (DFS) to link disparate manufacturing systems—the first use of which will be to integrate new automation capabilities with the *WorkStream* and *WorkStream Open* products for semiconductor customers.
- Consilium has invested nearly \$40 million during the last four years to broaden its product offerings.

Consilium is now shifting from investing in new products and technologies to focusing on sales, marketing and services. During 1994, the company added a vice president of marketing and a vice president of worldwide services to the executive team.

### Financials

Fiscal 1994 revenues were \$27.9 million, a 2% decrease from fiscal 1993 revenues of \$28.5 million. A five-year financial summary follows:

**Consilium, Inc.**  
**Five-Year Financial Summary**  
 (\$ Millions, except per share data )

Item	Fiscal Year				
	10/94	10/93	10/92	10/91	10/90
Revenue	\$27.9	\$28.5	\$27.6	\$27.4	\$28.9
• Percent change from previous year	(2%)	3%	1%	(5%)	34%
Income (loss) before taxes	\$(5.5)	\$(5.0)	\$(5.2)	\$(1.6)	\$4.6
• Percent change from previous year	(11%)	(4%)	(225%)	(135%)	21%
Net income (loss)	\$(6.2)	\$(5.3)	\$(5.3)	\$(1.1)	\$3.2
• Percent change from previous year	(a) (18%)	—	(382%)	(134%)	28%
Earnings (loss) per share	\$(0.85)	\$(0.75)	\$(0.77)	\$(0.15)	\$0.47
• Percent change from previous year	(13%)	3%	(413%)	(132%)	10%

(a) Includes a \$1.4 million restructuring charge taken in the third quarter of 1994 when Consilium curtailed operations at five sales offices.

Consilium management attributes fiscal 1994 results to the following:

- Product license revenues increased 7% during fiscal 1994.
- Fiscal 1993 product revenue included \$2.7 million in prepaid license fees associated with an agreement signed with Honeywell Industrial Automation and Control.
- Excluding this transaction, product revenue in fiscal 1994 would have increased 46% compared with fiscal 1993 as a result of higher *WorkStream Open* and *FlowStream* revenue levels.
- License revenues attributed to *WorkStream Open* and *FlowStream* products increased to 58% of total product sales in fiscal 1994 compared with 52% in fiscal 1993.

- Product license revenues attributed to the company's original *WorkStream* product declined 6% from fiscal 1993 to fiscal 1994.
- Product sales to non-North American customers were 37% of total product revenue in 1994 compared with 26% of total product revenue in 1993 and 37% in 1992.
- Product license revenue has been concentrated in a relatively small number of customers and Consilium's products have a high average selling price. During fiscal 1994, the percent of product license revenue derived from Consilium's ten largest customers was about 69%, compared to 65% in fiscal 1993 and 44% in fiscal 1992.
- Services revenue decreased 22% in fiscal 1994.
- Consilium recorded a \$1.6 million decrease in custom programming service revenue in fiscal 1994 as programming resources were shifted to

funded product development projects and ongoing research and development activities.

- Resident and application consulting service revenues were essentially unchanged from fiscal 1993, while training revenues increased 16%.
- Maintenance revenue increased by 3% in fiscal 1994 due to higher maintenance levels from the *WorkStream Open* and *FlowStream* product lines.
- Development revenues decreased 4% in fiscal 1994. This work is associated with porting agreements and co-funded development contract work for third parties.

Continued net losses were due to the following:

- Product costs as a percent of product revenue were 26%, 24% and 19% for fiscal 1994, 1993 and 1992, respectively. Cost of product revenue is higher on sales of *WorkStream Open* and *FlowStream* products compared with its original *WorkStream* product. This is primarily due to the royalties associated with third party applications embedded within these product lines.
- Cost of services decreased from \$5.4 million in fiscal 1993 to \$4.5 million in fiscal 1994 due primarily to a change in the nature of work performed by the corporate professional services group.
- Research and development expenditures (excluding capitalized amounts) were \$10.9 million (39% of revenue) in fiscal 1994, \$10.2 million (36% of revenue) in fiscal 1993 and \$9.4 million (34% of revenue) in fiscal 1992.
- Selling and marketing expenses actually declined during fiscal 1994 to \$11.5 million, from \$12.7 million in fiscal 1993 and \$13.4 million in fiscal 1992. Declines in 1994 were due primarily to lower salary, travel and office expenses and to consolidation of sales operations during the third quarter.

- Consilium recorded a restructuring charge of \$1.4 million during 1994 associated with the consolidation of sales operations previously discussed.

#### *Interim Results*

Revenue for the three months ending January 31, 1995 reached \$7.6 million, an 8% increase over \$7.0 million for the same period in 1994. Net income for the quarter was \$98,000, compared with a net loss of nearly \$1.1 million for the same period a year ago.

- Product license revenues increased 61% over the same period last year, more than offsetting decreases in development and development-related services revenues.
- Over the past six months, revenues from the company's newer *FlowStream* and *WorkStream Open* product lines have increased 161% from the same six month period a year ago.

#### **Market Financials**

One hundred percent of Consilium's revenue is derived from the discrete and process manufacturing industries. Fiscal 1994 revenue was derived approximately as follows:

Semiconductor and electronics.....	72%
Pharmaceutical and chemicals.....	20%
Aerospace and defense .....	7%
Other .....	1%
	100%

A majority of Consilium's domestic customers are Global Fortune 500 companies and include 6 of the 10 largest aerospace firms, 5 of the 12 largest chemical manufacturers, 13 of the 25 largest electronics companies and 8 of the 20 largest pharmaceutical firms worldwide.

The *WorkStream* product line is marketed to commercial aircraft, aerospace and defense, semiconductor and electronics manufacturers for applications including electronics assembly, sheet

metal fabrication and the manufacturing of a diverse range of products, including disk drives, silicon wafers, radar systems and navigation systems.

The *FlowStream* product line is targeted at companies in the pharmaceutical, medical device and chemical industries for both development and manufacturing applications.

#### Revenue Analysis by Product/Service:

Approximately 38% of fiscal 1994 revenue was derived from software product licenses; 35% from associated maintenance; 17% from professional services and 10% from development services. A three-year summary of source of revenue follows:

### Consilium, Inc.

#### Three-Year Source of Revenue Summary (\$ Millions)

Product/Service	Fiscal Year					
	10/94		10/93		10/92	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Software products	\$10.6	38%	\$9.9	35%	\$10.6	38%
Maintenance	9.9	35%	9.6	34%	9.9	36%
Professional services	4.7	17%	6.1	21%	5.8	21%
Development services (a)	2.7	10%	2.9	10%	1.3	5%
Total	\$27.9	100%	\$28.5	100%	\$27.6	100%

(a) Previously reported with software product revenue.

#### Geographic Markets

Approximately 69% of Consilium's fiscal 1994 revenue was derived from the U.S., 18% from Europe and 13% from Asia.

A three-year geographic source of revenue summary follows:

### Consilium, Inc.

#### Three-Year Source of Revenue Summary (\$ Millions)

Geographic Area	Fiscal Year					
	10/94		10/93		10/92	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S.	\$19.2	69%	\$20.8	73%	\$20.1	73%
Europe	4.9	18%	5.1	18%	5.0	18%
Asia	3.8	13%	2.6	9%	2.5	9%
Total	\$27.9	100%	\$28.5	100%	\$27.6	100%

## Employees

As of October 31, 1994, Consilium had 191 employees, segmented as follows:

Sales/marketing .....	60
Product development and maintenance .....	86
Services and support .....	30
Management, administration and finance .....	15
	191

## Key Products and Services

Consilium's *WorkStream* and *FlowStream* product lines monitor, measure and control the five essential elements of manufacturing—materials, equipment, personnel, specifications and facilities—throughout the production process.

### *WorkStream Products*

The *WorkStream* product line consists of 24 integrated software modules for managing the execution of a production plan for discrete lot-based industries.

- The modules, written in COBOL and C, are integrated through a common database and support tracking, quality and engineering management, planning and process as well as control and automation applications.
- *WorkStream* software was initially developed to run on Digital VAX computers. The product line has been ported to HP 9000 UNIX-based computers and incorporates several technologies, including client/server architecture, X-Windows, Motif, SQL database and POSIX compliance. Consilium has renamed its ported product *WorkStream Open*. Versions for IBM's RS/6000 AIX and Digital Alpha systems were made available during 1994.

*WorkStream* product license fees are based on the modules licensed and the processor size or the number of concurrent users supported.

- The list prices for *WorkStream* products currently range from \$50,000 for a field trial to several million dollars for a major company rollout, depending on module configuration and number of users.
- The average aggregate per-site license fee during fiscal 1994 for a new *WorkStream* installation was \$285,000.
- A customer can implement the core *WorkStream* modules for tracking, quality and engineering management with four users for approximately \$30,000 in total license fees. A customer can implement the same core modules on a pilot basis for 16 users for approximately \$70,000.

To date, *WorkStream* products have been installed at more than 280 sites in 20 countries. Approximately one-third of the company's existing customers have installed *WorkStream* at multiple sites.

### *FlowStream Products*

The *FlowStream* product line consists of integrated software for managing the execution of a production plan for process manufacturers, and is presently targeted at the pharmaceutical and chemical industries. *FlowStream* is a distributed application that allows users to access and share real-time information.

- The products address tracking and control, quality management, planning and scheduling and open system interfaces.
- *FlowStream* is written in C++ and runs on Digital VAX and Hewlett-Packard HP/UX workstations. Consilium released the first UNIX version of *FlowStream* in April 1994.

*FlowStream* product license fees are based on the number of concurrent users supported and the hardware platform used.

- List prices for *FlowStream* for a single site range from \$50,000 for a trial installation to more than one million dollars, based on the number of users and the options purchased.
- The average aggregate per-site license fee during fiscal 1994 for a new *FlowStream* installation was \$203,000.

#### *Maintenance and Support*

Consilium provides maintenance, training, installation support and onsite implementation and integration consultants for its *WorkStream* and *FlowStream* product lines.

Maintenance, which consists of product enhancements and technical support, may be purchased after the expiration of the warranty period, which is currently 90 days, and is automatically renewable annually thereafter. Annual maintenance fees are generally 15% of the list price of the modules being maintained and are subject to a Consumer Price Index-based inflator.

Consilium also sells training and customer support services on a time-and-materials basis.

- To date, resident employees have been made available at customer sites for periods ranging from three to 36 months on a fixed monthly fee basis.
- In addition, Consilium offers custom programming services, usually to interface *WorkStream* modules to automated equipment or internal information systems; to develop user specific reports, data entry forms, or bar code entry data capabilities; or to develop limited custom application functions. Custom programming is normally done only to support strategic sales efforts or technology projects.

#### **Clients**

A sample of clients by product line follows:

*WorkStream*—Read-Rite Corporation, Boeing Company, Seagate Microelectronics, NCR, South Carolina Research Authority, National Semiconductor, Mietec, MEMC, EM Microelectronics, SP Reifen, Thesys, Wacker Siltronic, Advanced MicroDevices, Alcatel CIT, Digital, Intel, Philips NV, SGS Thomson and Siemens.

*WorkStream Open*—AMCC, Zilog, Mietec, Alcatel CIT and Hewlett-Packard.

*FlowStream*—Baxter Healthcare Corporation, Glaxo, Pharmacia, Rhone-Poulenc Rorer, AZKO Faser AG, Hoechst division of Herberts GmbH, Eastman Chemical, Hercules, Lederle Laboratories, Boehringer Mannheim, Schering Plough and WL Gore.

#### **Marketing and Sales**

Consilium markets its products through its direct sales force in the U.S., Germany, Japan, South Korea, Taiwan and the U.K. The company also uses distributors in Japan, South Korea, Israel, portions of Western Europe and Southeast Asia.

The sales cycle for a *WorkStream* system typically ranges from 9 to 15 months from the initial identification of a qualified potential user to the installation of the software. Sales cycles for *FlowStream* have run from 6 to 12 months.

As a Digital Cooperative Marketing Partner (CMP) and as a Hewlett-Packard Independent Software Vendor (ISV) participant, Consilium participates with these hardware companies in a variety of cooperative marketing programs, including joint appearances at tradeshow, joint brochures, joint sales seminars and joint sales calls.

#### **Alliances**

Honeywell Industrial Automation and Control is using *FlowStream* for its TotalPlant solution, which integrates production, process and field management systems.

Consilium has a strategic partnership with systems integrator ITP Systems to provide integrated automation solutions to semiconductor manufacturers in the U.S. and Europe.

### Competitors

Consilium's primary competition comes from the management information systems departments of its largest potential customers, who have the capability to develop software internally.

Direct competition in the semiconductor market also comes from Promis, Inc, which is also a Digital CMP participant.

Consilium anticipates experiencing increased competition from other vendors, including FASTech (discrete market) and SAP and Incode (pharmaceutical market).

### INPUT Assessment

Consilium's strengths include its leading edge on the manufacturing execution systems market for management of the plant floor and the expansion of its product lines for open systems environments.

The company's recent, sizable investment in products has further strengthened its position against competition.

Challenges include developing a successful marketing organization, shortening sales cycles and proving its new products in the marketplace. Financially, the company must sustain a return on its four-year investment by increasing revenues coming from its new products.

## COMPANY PROFILE

---

### **CONSILIUM, INC.**

640 Clyde Court  
Mountain View, CA 94043  
(415) 691-6100

Jonathan J. Golovin, Chairman  
Thomas A. Tomasetti, President and CEO  
Public Corporation, NASDAQ  
Total Employees: 262 (10/91)  
Total Revenue, Fiscal Year End  
10/31/91: \$31,455,000

---

### **The Company**

Consilium, Inc. provides integrated plant floor management software products and associated support services to discrete and process manufacturers. The company's *WorkStream*<sup>®</sup> and *FlowStream*<sup>™</sup> software product lines run exclusively on DEC VAX computers. Consilium has been a DEC Cooperative Marketing Program (CMP) participant since 1984.

- Consilium was incorporated in California in October 1978 to provide consulting services and released the first modules of the *WorkStream* product line during fiscal 1983. The company was reincorporated in Delaware in March 1991.
- The *WorkStream* product line was initially developed for semiconductor manufacturers. Consilium has since adapted the system to other lot- and batch-based manufacturing industries, including electronics systems, commercial aircraft, aerospace and defense, and specialty chemicals.
- The *FlowStream* product line, developed in cooperation with DEC and introduced during fiscal 1991, complements the company's *WorkStream* product line and extends plant floor management capabilities to hybrid/process manufacturers.

Total revenues for fiscal 1991 were essentially flat at \$31.5 million, compared to \$31.2 million in fiscal 1990. Net income was \$1.5 million, compared to \$4.8 million for fiscal 1990. In the five-year summary that follows, financials for fiscal 1990 and 1989 have been restated to reflect a change in the method of accounting for maintenance revenue:

**CONSILIUM, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	10/91	10/90	10/89	10/88	10/87
Revenue	\$31,455	\$31,228	\$22,119	\$15,590	\$11,087
• Percent increase from previous year	1%	41%	42%	41%	N/A
Income before taxes	\$2,160	\$6,864	\$4,347	\$2,404	\$586
• Percent increase (decrease) from previous year	(69%)	58%	81%	310%	N/A
Net income	\$1,469	\$4,805	\$2,869	\$1,442	\$272
• Percent increase (decrease) from previous year	(69%)	67%	99%	430%	N/A
Earnings per share	\$0.21	\$0.70	\$0.48	\$0.28	\$0.05
• Percent increase (decrease) from previous year	(70%)	46%	71%	460%	N/A

Consilium management attributes fiscal 1991 results to the following:

- Product license revenues decreased 5% primarily due to the continuing recession, as potential customers in the U.S. delayed purchase decisions.
- Product license revenue has been concentrated in a relatively small number of customers and its products have a high average selling price. During fiscal 1991, the percent of product license revenue derived from Consilium's ten largest customers was about 51%, compared to 55% in fiscal 1990.
- Maintenance revenue increased 17%, reflecting the expansion of the company's customer base, maintenance price increases resulting from cost of living adjustments, and certain contractual revisions.
- Professional services revenue declined slightly. Lower resident-related service and consulting revenues were offset by higher custom service and training revenues.
- Cost of revenue rose 20%, from \$5.2 million in fiscal 1990 to \$6.2 million in fiscal 1991. Cost of product revenue increased 11%,

with higher amortization expenses partially offset by lower purchased software costs. Cost of revenue increased 24% due to additional hiring in the custom services and resident organizations.

- Selling and marketing expenses rose 18%, from \$10.9 million in fiscal 1990 to \$12.9 million in fiscal 1991, principally as a result of increases in sales and marketing personnel and the opening of domestic and international sales offices. Three offices were opened in 1991 and six offices opened in 1990, bringing the total as of October 31, 1991 to 23.
- Research and development expenditures were \$7.2 million (23% of revenue) in fiscal 1991, \$7.2 million (23% of revenue) in fiscal 1990, and \$5.2 million (24% of revenue) in fiscal 1989.
- General and administrative expenses rose 65%, from \$2.3 million in fiscal 1990 to \$3.8 million in fiscal 1991 due to higher travel-related expenses by corporate offices and an increase in the allowance for doubtful accounts. The current year reflects bad debt write-offs of \$956,000. Due to poorer economic conditions, the company has increased its bad debt allowances.

As of October 31, 1991, Consilium had 262 employees, segmented as follows:

Employee Category	Number of Employees	Percent of Total
Sales/marketing	99	38%
Product development and maintenance	94	36%
Services and support	47	18%
Management, administration, and finance	22	8%
Total	262	100%

Consilium's primary competition comes from the management information systems departments of its largest potential customers, who have the capability to develop software internally.

- Direct competition also comes from Promis, Inc, which is also a DEC CMP participant.
- Consilium anticipates experiencing increased competition from systems integrators such as Andersen Consulting and IBM.

**Key Products and Services**

Approximately 56% of Consilium's fiscal 1991 revenue was derived from applications software products, 29% from associated maintenance services, and the remaining 15% from professional services.

A three-year source of revenue summary follows:

**CONSILIUM, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	10/91		10/90		10/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software products	\$17.7	56%	\$18.7	60%	\$13.7	62%
Maintenance	9.0	29%	7.7	25%	5.1	23%
Professional services	4.7	15%	4.8	15%	3.3	15%
<b>TOTAL</b>	<b>\$31.4</b>	<b>100%</b>	<b>\$31.2</b>	<b>100%</b>	<b>\$22.1</b>	<b>100%</b>

Virtually all of Consilium's fiscal 1991 revenue was derived from software and services related to the *WorkStream* product line. The company does not anticipate significant revenues from its *FlowStream* product until late fiscal 1992.

The *WorkStream* product line consists of 19 integrated software modules for managing the execution of a production plan for lot- and batch-based industries.

- The modules, written in COBOL, are integrated through a common data base and support tracking, quality and engineering management, planning, and process and control and automation applications.
- Product license fees are based on the modules licensed and the processor size or the number of concurrent users supported.
- In November 1991, Consilium announced price reductions up to 50% for its *WorkStream* products and the availability of a four-user license. Previously, the smallest license was for eight users. Both actions are designed to encourage first-time buyers to pilot *WorkStream*.

- The list prices for the entire family of *WorkStream* products currently range from \$736,250 on a MicroVAX II to over \$4.4 million on a VAX 8978, depending on the module configuration.
- List prices for individual modules range from \$2,500 to \$75,000 on a MicroVAX II to \$15,000 to \$450,000 on a VAX 8978.
- The average aggregate per-site license fee during fiscal 1991 for a new installation was \$428,000.
- To date, more than 1,500 modules of *WorkStream* have been installed at over 200 sites in 18 countries. Approximately one-third of the company's existing customers have installed *WorkStream* at multiple sites.
- In July 1991, Consilium and Electronic Data Systems (EDS) entered into an agreement to provide computer-integrated manufacturing systems featuring *WorkStream* products to the aerospace and defense industries in the U.S.
- Under the agreement, EDS and Consilium will both dedicate personnel to creating a specialized sales force with system demonstration sites around the country.
- Consilium will select other companies to provide additional software required to enhance the offering and will serve as primary liaison between these companies and EDS.

The *FlowStream* product line consists of integrated software for managing the execution of a production plan for manufacturers in hybrid/process environments.

- The products address tracking and control, quality management, planning and scheduling, and open system interfaces.
- *FlowStream* is written in C++ and runs on DEC VAX workstations. It is based on DEC's Network Application Services (NAS) architecture, making it easier to transfer data between *FlowStream* software and other programs used in the manufacturing environment.
- *FlowStream* product license fees will be based on the number of concurrent users supported and DEC hardware platform used.

### *Maintenance and Support:*

Maintenance, which consists of product enhancements and technical support, may be purchased after the expiration of the warranty period, which is currently 90 days, and is automatically renewable annually thereafter. Currently, annual maintenance fees can range from 10% to 15% of the list price of the modules being maintained and are subject to a Consumer Price Index-based inflator.

Consilium also sells training and customer support services on a time-and-materials basis.

- To date, resident employees have been made available at customer sites for periods ranging from three to 36 months on a fixed monthly fee basis.
- In addition, Consilium offers custom programming services, usually to interface *WorkStream* modules to automated equipment or internal information systems; to develop user specific reports, data entry forms, or bar code entry data capabilities; or to develop limited custom application functions. Custom programming is normally done only to support strategic sales efforts or technology projects.

### **Industry Markets**

One hundred percent of Consilium's revenue is derived from the discrete and process manufacturing industries. Approximately 36% of fiscal 1991 revenue was derived from the semiconductor industry, 19% from chemicals, 16% from electronics, 16% from aerospace and defense, and 13% from commercial aircraft firms.

- DEC, principally acting as a systems integrator, accounted for approximately 19% of Consilium's total revenues in fiscal 1991.

A majority of Consilium's domestic customers are Fortune 500 companies and include 25 of the top U.S. electronics manufacturers, 15 of the top 25 U.S. defense contractors, and 16 of the top 50 Fortune Global 500 companies.

The *WorkStream* product line is marketed to commercial aircraft, aerospace and defense, specialty chemical, semiconductor, and electronics manufacturers for applications including electronics assembly, sheet metal fabrication, specialty fiber manufacturing, and the manufacturing of a diverse range of products, including medical devices, disk drives, radar systems, navigation systems, and photographic and X-ray film.

The *FlowStream* product line is specifically designed for companies that use hybrid/process systems of manufacturing. Some of the key industries in which *FlowStream* is being targeted are food and beverage, consumer packaged goods, automotive fabrication, plastics, and textiles and fibers.

### Geographic Markets

Approximately 63% of Consilium's fiscal 1991 revenue was derived from the U.S., 22% from Europe, and 15% from Asia.

A three-year geographic source of revenue summary follows:

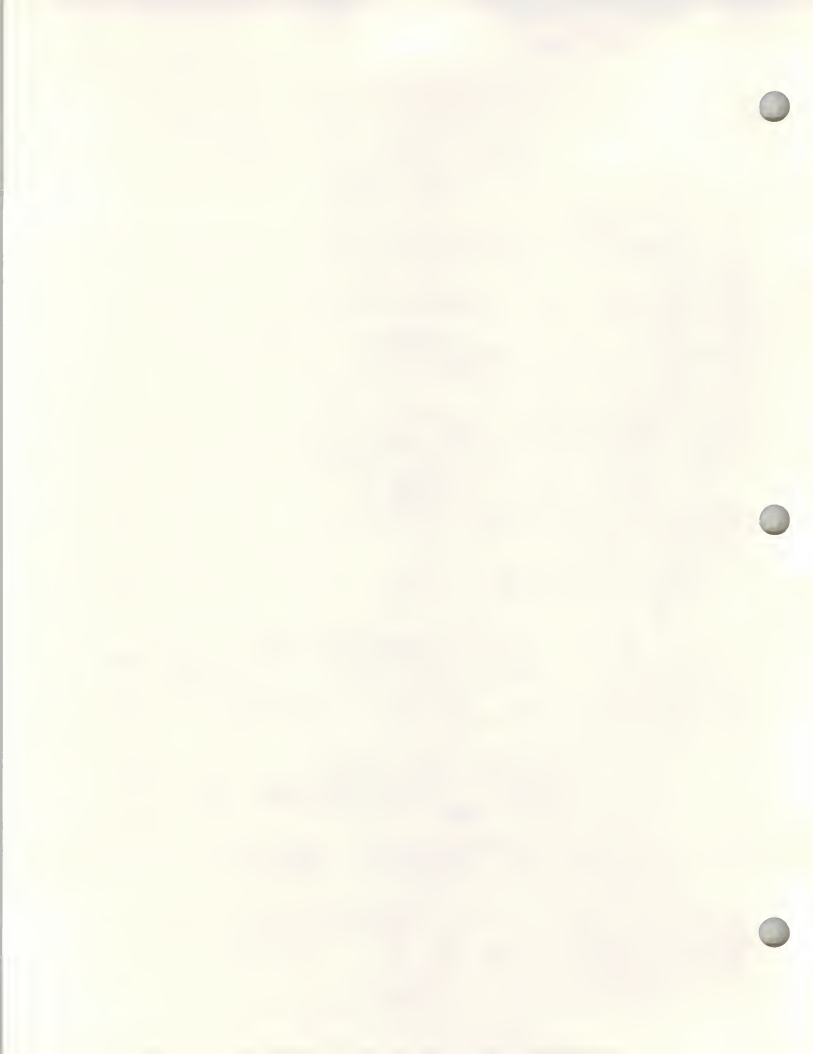
**CONSILIUM, INC.**  
**THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY**  
 (\$ millions)

ITEM	FISCAL YEAR					
	10/91		10/90		10/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$19.9	63%	\$19.8	63%	\$16.6	75%
Europe	6.9	22%	4.9	16%	3.2	15%
Asia	4.6	15%	6.5	21%	2.3	10%
<b>TOTAL</b>	<b>\$31.4</b>	<b>100%</b>	<b>\$31.2</b>	<b>100%</b>	<b>\$22.1</b>	<b>100%</b>

U.S. offices are in Bellevue (WA), Blue Bell (PA), Chicago (IL), Dallas (TX), Denver (CO), Detroit (MI), Irvine and Mountain View (CA), Maitland (FL), Minneapolis (MN), Morris Plains (NJ), Nashua (NH), Raleigh (NC), Richmond (VA), Rochester (NY), and Utica (NY).

International offices are in Australia, England, France, Germany, Singapore, South Korea, Taiwan, and Japan. Consilium also has distributors in Japan, Israel, portions of Western Europe, and Southeast Asia.

- In October 1991, Consilium formed Nihon Consilium Kabushiki Kaisha, a subsidiary based in Tokyo.



## COMPANY HIGHLIGHT

### CONSOLIDATED COMPUTER CORP

1180 Avenue of the Americas  
New York, NY 10036  
(212) 575-8240

Robert McGill, President  
Private Corporation  
Employees: 90  
Revenue, Fiscal Year End  
June 30, 1980: \$2.8 million

---

### THE COMPANY

- Consolidated Computer Corp (CCC) has been in business since 1965. The company originated through a facilities management contract with M. N. Landau Stores. The company's primary business is providing processing services to the retail industry in the New York metropolitan area.
- CCC's FY 1980 revenues were \$2.8 million, an 8% increase over FY 1979 revenues of \$2.6 million. Pre-tax profits generally average 9% per year. The company claims it has been consistently profitable and has no outstanding debt.

### KEY PRODUCTS AND SERVICES

- Approximately 93% of CCC's revenues derive from batch processing services and 7% from systems and program development. Most of the systems development work is performed for existing clients.
- An approximate distribution of CCC's FY 1980 revenue sources follows:

- Processing for four large retail accounts	\$1,000,000
- Payroll processing	800,000
- Bulk computer time sales	250,000
- Program development	200,000
- Processing for the garment industry	200,000
- Other data processing services	350,000
	<hr/>
	\$2,800,000
- CCC specializes in inventory control applications for retailers, payroll services and accounts payable.
- Major services offered by the company are:
  - Facilities management.
  - Systems and program development.

## COMPANY HIGHLIGHT/CONSOLIDATED COMPUTER CORP

- Batch accounting systems, including accounts payable, general ledger, profit and loss reporting and accounts receivable.
- Manufacturing and material control systems.
- Merchandise and inventory information systems.
- Payroll processing.
- Pension payment systems.
- Optical scanning.
- Charitable institution systems.
- All software has been written by the company with the exception of payroll. CCC uses the Super Pay I and Pay II packages from Wang (PHI) Computer Services, Inc.

**GEOGRAPHIC MARKETS** CCC's clients are primarily in the New York metropolitan area.

## COMPUTER HARDWARE

- CCC's data center is located at its headquarters. Equipment at the center consists of:
  - Three IBM 360/40s (128K, 256K, 448K).
  - IBM 1287 Optical Scanner.
  - One Entrex 480 Key-to-disk system with 15 keystations.
- CCC has an IBM 4300 on order that will be used as a communications/input device.

## COMPANY HIGHLIGHT

CONSUMER SYSTEMS SERVICES  
GROUP, INC.  
1100 31st Street  
Downers Grove, IL 60515  
(312) 325-2102

Ray M. Dionisio, President  
Subsidiary of Consumer Systems  
Corporation  
Total Employees: 165  
Total Revenue, Fiscal Year End  
7/31/82: \$9,000,000

---

### THE COMPANY

- Consumers Systems Services Group, Inc., a wholly owned subsidiary of the Consumer Systems Corporation holding company, was founded in 1968 to provide professional services. Since 1980 the company has expanded its offerings to include software products and remote computing services.
- Fiscal 1982 revenue reached \$9 million, a 13% increase over 1981 revenue of \$8 million. A three-year revenue summary follows:

CONSUMER SYSTEMS  
THREE-YEAR REVENUE SUMMARY  
(\$ thousands)

ITEM \ FISCAL YEAR	7/82	7/81	7/80
Revenue	\$9,000	\$8,000	\$7,500
• Percent increase over previous year	13%	8%	NA

- Consumer Systems management projects a 20-30% increase in revenue for fiscal 1983.
- As of July 31, 1982, Consumer Systems had 165 employees. The company currently has 178 employees, segmented as follows:

Marketing	25
Consultants, systems designers, and applications specialists	130
Computer operations	1
Management	8
General and administrative	<u>14</u>
	178

## KEY PRODUCTS AND SERVICES

- Seventy-eight percent of Consumer Systems' fiscal 1982 revenue was derived from professional services, 20% from packaged software sales, and 2% from remote computing services.
- Consumer Systems provides professional services to over 100 clients, the majority of which are Fortune 500 companies.
  - Services are provided in the following areas:
    - Management Advisory Services: Consumer Systems' consulting staff addresses the executive management data processing problems of decision making, directing, staff development and training, and planning.
    - Project Management Services: Consumer Systems manages client software development projects using its proprietary System Management Guidelines (SMG) methodology.
    - Contract Services: Consumer Systems' applications specialists, systems analysts, and technical consultants provide custom software development and supplement client project teams to meet short-term personnel requirements. Consumer Systems also uses SMG for Contract Services projects.
  - Sixty-five percent of Consumer Systems' professional services revenue is derived from major systems development projects involving multi-year contracts.
  - Examples of professional services projects follow:
    - Consumer Systems has provided approximately 15 man years of consulting support involving IBM systems using both DOS and MVS operating systems to a major financial institution. Services include conversion planning and support from DOS to OS, systems programming, quality assurance, all phases of systems development, applications software package review and modification, and long-range facilities planning.
    - Consumer Systems has provided professional services to a major merchandising company since December 1978. The first project involved the conversion of 300 inventory programs from a Honeywell H-2070 to an IBM 370/145 running under OS/VS1. Consumer Systems also evaluated the company's Mail Order System, recommending short- and long-term enhancement goals, and assisted in the implementation of Common Information and Physical Inventory Systems.

## CONSUMER SYSTEMS SERVICES GROUP, INC.

- The company provided professional services to a manufacturing firm during its conversion from a Honeywell 1200 and an IBM System 3/15D to an IBM 4331 running under DOS/VSE. A second project involved installation of all systems software, including Power, RJE, and CICS, along with conversion of all files to 3370 FBA VSAM. Standards and procedures development were provided, as was technical training.
- Consumer Systems currently offers three systems software products and has primarily penetrated the services and manufacturing industry markets. The products, designed for IBM and plug-compatible mainframes, include:
  - JCLFLOW, introduced in 1980, an OS JCL documentation aid used to develop and maintain flowchart and cross-reference documentation. Priced at \$7,500, there are currently 40 installations of JCLFLOW.
  - DATABASIC, introduced in 1981, a productivity aid that assists applications programmers in the testing of IMS data base applications. Priced at \$13,500 for the DOS version and \$23,500 for the OS version, there are currently over 50 systems installed.
  - TEST/IMS, introduced in 1982, a productivity aid for testing IMS applications programs. Priced at \$16,000, there are approximately 30 systems installed.
- Consumer Systems offers its professional services clients access to its HP 3000 on a remote computing utility basis. Available software includes COBOL, FORTRAN, BASIC, RPG, and IMAGE. These services contributed 2% of total revenue in fiscal 1982.

### INDUSTRY MARKETS

- Consumer Systems estimates its fiscal 1982 revenue was derived from the following industry markets:

Banking and finance	25%
Insurance	20
Manufacturing	15
Government	15
Other (transportation, utility, medical, education, and services)	<u>25</u>
	100%

### GEOGRAPHIC MARKETS

- One hundred percent of Consumer Systems' fiscal 1982 revenue was derived from the U.S.

## CONSUMER SYSTEMS SERVICES GROUP, INC.

- Approximately 60% of revenue was derived from North Central states, while 40% was derived from various other locations nationwide.
- Consumer Systems has regional offices in Atlanta, Dallas, and Minneapolis and plans to open offices in New York and Los Angeles in 1983.
- Consumer Systems intends to expand its operations to sell its software products internationally.

### COMPUTER HARDWARE AND SOFTWARE

- Consumer Systems has an HP 3000 running under MPE-III installed at its headquarters in Downers Grove.
- Remote computing services are available on a dial-up basis.

## COMPANY HIGHLIGHT

**CONSUMER SYSTEMS SERVICES  
GROUP, INC.**  
2107 Swift Drive  
Oak Brook, IL 60521  
(312) 325-2102

Ray M. Dionisio, President  
Subsidiary of Consumer Systems  
Corporation  
Total Employees: 200  
Total Revenues, Fiscal Year End  
7/31/80: \$7,500,000

---

### THE COMPANY

- Consumer Systems Services Group, Inc. (Consumer Systems) was incorporated in 1968 in Illinois. It is a wholly owned subsidiary of Consumer Systems Corp., a holding company which owns one other subsidiary, CPU, Inc., a recruiting firm.
- Consumer Systems provides professional services to over 100 clients, the majority of which are Fortune 500 companies. The company reported revenues of \$7.5 million in FY 1980. A 10-30% increase is projected for FY 1981.
- In an attempt to diversify from its concentration in professional services, Consumer Systems has acquired the rights to market a software product and has started to provide processing services.
- There are approximately 200 employees of Consumer Systems, divided as follows:

Marketing	11
Consultants, Systems Designers and Applications Specialists	153
Computer Operations	1
General and Administrative	20
Management	<u>15</u>
	200

- Consumer Systems' management considers competition to stem from Big 8 CPA firms, package software houses and in-house client systems development staffs.

### KEY PRODUCTS AND SERVICES

- One hundred percent of Consumer Systems Services Group's for FY 1980 revenues were derived from data processing consulting services. Consumer Systems' professionals provide consulting in the following areas:

## COMPANY HIGHLIGHT/CONSUMER SYSTEMS SERVICES GROUP, INC.

- Feasibility studies, hardware and software.
- MIS Audits.
- Major Systems Design and Implementation.
- Project Management.
- Training.
- Systems Conversion.
- Contract Programming.
- Thirty-seven percent of Consumer Systems' revenues are derived from major systems development projects involving multi-year contracts. One client, the State of Illinois Department of Labor, Bureau of Employment Securities, has designated Consumer Systems as its primary vendor.
- Consumer Systems has expertise in the insurance industry from which 25% of its revenues are generated. Recently, the company successfully completed the implementation of a premiums and claims processing system for a major insurance client.
- Other contracts and projects have included:
  - Major systems conversion from IBM DOS to IBM OS for the State of Colorado Judicial Department and Wisconsin Power and Light Company.
  - Implementation of a payroll system for the U.S. Post Office.
  - Major involvement in the development of a terminal automation system for Standard Oil of Indiana using IBM Series I equipment.
- In January 1980, Consumer Systems installed a Hewlett-Packard 3000 Series III computer system. At present, although processing services are gradually being marketed, the system is used primarily for internal software development and support of client development needs.
- In July 1980, Consumer Systems signed an agreement with Datec, Inc. of Chicago to market a Series I Programming Tool. There is currently one client installation of the package which sells for \$30,000.
- For clients of Consumer Systems, several software products are available:
  - CMS, a comprehensive, integrated project management system designed for professional services firms.
  - SHAND, an ANSI Cobol programmer productivity tool designed to reduce programmer coding and debugging time.

## COMPANY HIGHLIGHT/CONSUMER SYSTEMS SERVICES GROUP, INC.

- JCLFLOW, an OS JCL documentation aid, designed for use in developing and maintaining systems documentation.
- VCOMP, a file comparison tool valuable in parallel test validation.

### INDUSTRY MARKETS

- An estimate of Consumer Systems' industry markets follows:

Insurance	25%
Manufacturing	20
Distribution	15
Government (State & Local)	20
	<hr/>
	80%

- The remaining 20% of revenues is derived from the transportation, utilities, banking and finance, medical and hospital, education and service industries.

### GEOGRAPHIC MARKETS

- Approximately 85% of Consumer Systems' revenues stem from northern Mid-West states.
  - Consumer Systems has one regional office in Minneapolis (MN) that employs 40 consultants.
- The other 15% of revenue stems from various locations nationwide.

**COMPUTER HARDWARE AND SOFTWARE** Consumer Systems has an HP-3000, MPE-III system installed. Timesharing services are available on a local or dial-up line basis. Available software includes COBOL, FORTRAN, BASIC, RPG and IMAGE.



## COMPANY HIGHLIGHT

CONTINENTAL SOFTWARE  
COMPANY  
11223 South Hindry Avenue  
Los Angeles, CA 90045  
(213) 410-3977

Jim Sadlier, President  
Division of Arrays, Inc.  
Private Corporation  
Total Employees: 50  
Total Revenue, Fiscal Year End  
11/30/82: \$4,500,000\*

---

### THE COMPANY

- Continental Software, formed in 1980 as a division of Arrays, Inc., markets microcomputer-based financial applications and related software products for personal and business use.
  - Arrays, Inc., founded in 1980 by Jim Sadlier, is a holding company for Continental Software and The Book Company, another division that markets computer software reference books.
- As of November 30, 1982, Continental Software had 50 employees. The company currently has 75 employees, segmented as follows:

Marketing/sales	14
Software development and programming	5
Shipping and product purchasing	20
General and administrative	<u>36</u>
	75

- Continental's major competitors include Financier, Inc.; Software Publishing Corporation; BPI Systems, Inc.; and Ashton-Tate.

### KEY PRODUCTS AND SERVICES

- One hundred percent of Continental's fiscal 1982 revenue was derived from the sale of microcomputer applications software products and related services.
  - Continental's on-line software runs on a variety of microcomputers including Apple II/IIe, IBM PC/XT, Osborne I and Osborne Executive I, Commodore 64, TRS-80 Model III/4, Kaypro II, Texas Instruments Professional Computer, Zenith Z100, and Atari 400, 800, and 1200XL.
  - A listing of available software products is provided in the exhibit.

\*INPUT estimate

## CONTINENTAL SOFTWARE COMPANY

EXHIBIT  
CONTINENTAL SOFTWARE  
SOFTWARE PRODUCTS

PRODUCT	DESCRIPTION	PRICE (Suggested Retail)	CPU REQUIREMENTS (Operating System)
The Home Accountant	Personal finance management system.	\$74.95-150.00	Apple II/IIe (Apple DOS), IBM PC/XT (PC DOS), Atari 400, 800, 1200XL (Atari DOSII), Osborne I and Executive I (CP/M), TI Professional Computer (MS-DOS), Zenith Z100 (Z-DOS), Commodore 64 (KERNAL), COMPAQ (COMPAQ-DOS), TRS-80 Model III/4 (TRS-DOS), Kaypro II (CP/M).
F.C.M. (Filing, Cataloging, and Mailing)	Data base/mail list filing system. IBM version All others	\$124.95 \$ 99.95	IBM PC/XT (PC DOS), Apple II/IIe (Apple DOS), Commodore 64 (KERNAL), TI Professional Computer (MS-DOS)
F.A.S.T. (Financial Analysis Statement Template)	Financial analysis and forecasting tool.	\$ 99.95	Apple II/IIe (Apple DOS), IBM PC/XT (PC DOS), TI Professional Computer (MS-DOS).
CPA (Computer Programmed Accounting)	Bookkeeping and income property management tool. General Ledger Accounts Receivable Accounts Payable Payroll Property Management	\$250.00 \$250.00 \$250.00 \$250.00 \$695.00	Apple II/IIe (Apple DOS).     This module is also available on the IBM PC/XT (PC DOS).
The Tax Advantage	Tax management and preparation tool.	\$ 59.95	Apple II/IIe (Apple DOS), Atari 400, 800, 1200XL (Atari DOSII), IBM PC/XT (PC DOS), TI Professional Computer (MS-DOS), Commodore 64 (KERNAL).
UltraFile	Data base management system, report and graph generator.	\$195.00	IBM PC/XT (PC DOS), TI Professional Computer (MS-DOS).

- Continental's primary software products include the following:
  - The Home Accountant, Continental's top-selling product with over 100,000 installations, was released in 1981. It is a financial management system that maintains personal finance transactions including credit card accounts, cash purchases, and investments.
    - The system tracks up to five check books, maintains up to 200 budget categories, flags transactions for later recall, reconciles bank statements, prints checks, and provides a complete accounting report of assets, liabilities, budgets, expenses, and net worth.
    - Forecasting capabilities track future values and analyze financial assumptions.
    - Graphics capabilities for bar and line graphs and/or trend analysis are available.
  - F.C.M. (Filing, Cataloging, and Mailing), formerly known as 1st Class Mail and released in 1981, is a data base/mail list filing system. The menu-driven system performs a variety of applications including printing labels with return addresses and messages, handling foreign addresses, formatting custom labels, and printing specialized lists such as inventory of household goods and medical records.
    - The Form Letter enhancement, introduced in January 1983, enables users to insert mailing list information into opening or closing statements of form letters or other preformatted documents.
    - F.C.M. and Form Letter are compatible with a variety of word processing programs for Apple systems, including Apple Writer I.I and II, SuperScribe, ScreenWriter, PIE:Writer, Apple Pie, and Magic Window. IBM systems interface only with MicroPro's WordStar and MailMerge word processing programs.
  - CPA (Computer Programmed Accounting), released in 1980, is a family of five standalone modules that can be integrated to provide a variety of accounting and income property management functions. The modules include double entry General Ledger, Accounts Receivable, Accounts Payable, Payroll, and Property Management.
    - Property Management, released in 1982, performs bookkeeping functions for residential or commercial properties with up to 1,000 renters or lessees. Financial records including income and expense summaries and individual tenant records can be generated.

## CONTINENTAL SOFTWARE COMPANY

- Other capabilities enable users to post rental charges to tenants' balances; record a history of tenant charges, deposits, refunds, payments, and write-offs; and maintain current balances for tenant accounts.
- The system prints detailed tenant statements; records the landlord's nonrent income and depreciation for customized reports; and computes a rental figure based on percentage of square feet, leases as a percentage of sales, and individual tenant charges for common-area assessments.
- Property Management can interface with any of Continental's accounting packages or with Peachtree Software's PeachPak 8 Accounting Series.
- Continental provides customer and technical support services, including a hotline service available Monday through Friday from 8:30 A.M. to 4:00 P.M. (PST).
  - For a fee of \$20, end users receive the hotline service and software updates for one year. Dealers are supported free of charge.
- Continental's software development is conducted through royalty agreements with independent authors. Continental is responsible for the testing, marketing, documentation, and support of the software.
- New product developments include the following:
  - In August 1983 South-Western Publishing Company of Cincinnati, a subsidiary of SFN Companies, became the exclusive marketer of educational versions of The Home Accountant and The Tax Advantage, modified for use in secondary schools, universities, and adult education courses. The Tax Advantage will be available to schools in November 1983. The Home Accountant will be available in January 1984.
  - UltraFile, a data base management system and report generator, will be released in January 1984.
  - Two packages, scheduled for release in late 1984, will run on the IBM PC/XT under PC DOS and on the Texas Instruments Professional Computer under MS-DOS.
    - The Small Business Accountant, a double entry accounting system for small businesses, will retail for \$195.
    - The Continental General Ledger and Financial Reporting System, a full-featured accounting package, will retail for \$395.

## CONTINENTAL SOFTWARE COMPANY

### INDUSTRY MARKETS

- Continental's fiscal 1982 revenue was derived from wholesale and retail distributors, OEMs, and dealers. Less than 1% of revenue was from direct sales to end users.

### GEOGRAPHIC MARKETS

- Over 75% of Continental's fiscal 1982 revenue was derived from the U.S. The remainder was from Australia and Japan.
- The company has no branch sales offices.

### COMPUTER HARDWARE AND SOFTWARE

- Continental Software maintains a variety of microcomputers at its Los Angeles headquarters including the following models: TRS-80, Atari 400 and 800, Commodore 64, Osborne I, Kaypro II, Apple II/IIe, and IBM PC.



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

January 1996

## The Continuum Company, Inc.

**Chairman:** Ronald C. Carroll  
**President & CEO:** W. Michael Long  
 9500 Arboretum Boulevard  
 Austin, TX 78759-6399  
**Phone:** (512) 345-5700  
**Fax:** (512) 338-7041

Status:	Public
Employees:	2,953 (3/95)
Revenue:	\$323,536,000
Fiscal Year End:	3/31/95

### Key Points

- The Continuum Company (Continuum) is an international professional services, outsourcing (systems operations) and software company that primarily targets life and property and casualty insurance companies.
- In December 1995, Continuum announced an agreement to merge with Dallas-based Hogan Systems, expanding Continuum's products to include software and related services for the banking and finance industry.
- The company expanded its operations in Europe with the December 1995 acquisition of SOCS Groupe, SA, a Paris-based software and services company serving the insurance industry.
- Continuum has successfully expanded into the outsourcing arena. During fiscal 1995, outsourcing revenue increased 95% to more than \$108 million. For the six months ending September 30, 1995, revenue from outsourcing customers was \$71.2 million (37% of total revenue).
- Continuum expanded into the U.S. health insurance market with the acquisition of Pro\*Systems, Inc. a provider of health insurance administration software.

## Company Description

Continuum, incorporated in 1968, provides applications software products, associated professional services, systems operations and processing services primarily to the life insurance, general insurance (property and casualty) and reinsurance industry.

- Outsourcing services offered by the company range from providing a customer with remote processing of a single insurance application to the complete replacement of a customer's data processing department.
- The software systems marketed by Continuum automate the administrative functions of insurance companies, such as issuing policies, paying agents' commissions and complying with complex government regulations and reporting requirements.
- Upon completion of its merger with Hogan Systems (in February or March 1996), Continuum will also offer integrated on-line applications software and related services to financial institutions.

## Organization and Structure

Continuum Strategic Solutions International (CSSI), headquartered in Austin (TX), is an outsourcing division established by Continuum during fiscal 1995 to build on the company's success in providing strategic outsourcing solutions that help insurance company customers meet their long-term business goals.

Continuum Administrative Services Corporation (CASC), headquartered in Dallas (TX), was formed by Continuum to enhance its commitment to the third-party administration (TPA) business. CASC provides full-service solutions combining outsourcing with administrative support for insurers' in-force business and new product launches.

Continuum's Health Services Division, headquartered in Richmond Heights (OH), provides health insurance administration software to the U.S. health insurance market.

In North America, in addition to its headquarters office in Austin (TX), Continuum has offices in Dallas (TX), Wethersfield (CT), Kansas City (MO), Richmond Heights (OH) and Toronto and Scarborough (Ontario, Canada).

Principal operating and sales facilities in Europe are located in Camberley (England) and Oslo (Norway). Other European administrative and sales offices are in Halifax (England), Copenhagen (Denmark), Homburg (Germany), Paris (France), Utrecht (the Netherlands), Stockholm (Sweden), Aarau (Switzerland), Dublin (Ireland), and Lisbon (Portugal).

Principal facilities for Pacific Rim operations are located in Sydney and Melbourne (Australia) and Auckland (New Zealand). Other Pacific Rim offices are in Tokyo (Japan), Singapore and Hong Kong.

Continuum's data processing facilities in Austin (TX) were closed in February 1994. Processing services are now provided through DST Systems' facilities in Kansas City (MO). Continuum operates large data centers in Sydney (Australia) and Auckland (New Zealand). Other data processing facilities are in Tokyo (Japan) and Camberley (England).

## Company Strategy

Continuum's objective is to be the preferred provider of software products and implementation and consulting services to the global insurance industry.

The company is responding to significant changes in the insurance industry with the following strategies:

- **Flexible Products**—Continuum has extended its commitment to an open, integrated systems environment through Enterprise Solutions by Continuum™ (ES/C), its strategy for delivering software in smaller components that can be readily integrated with a customer's existing and future systems. ES/C includes a modular, open architecture approach to software development. Various functions that traditionally would be inseparable parts of a single large software system are divided into discrete products that can be installed and used one at a time or in combination. Open architecture principles allow these separate software products to be integrated readily not only with one another, but also with customers' existing and future systems from Continuum or third parties.
- **Geographic and Product Diversity**—Since the early 1980s, Continuum has pursued a strategy of establishing a strong local marketing presence and customer support capability in each of the three major insurance geographies—North America, Europe and the Pacific Rim—and has since expanded its geographic presence and product lines through acquisitions and development programs.
- **Outsourcing Provider**—Continuum believes that its insurance expertise, established customer base and broad insurance product offerings position it to pursue outsourcing (systems operations) contracts with insurance companies.

## Financials

Continuum's financials have been restated to reflect the pooling-of-interests acquisition of Paxus. The results also reflect the Vantage merger, which was accounted for as a purchase, since September 30, 1993.

Continuum's fiscal 1995 revenue reached \$323.5 million, a 14% increase over fiscal 1994 restated revenue of \$242.9 million. Income reached \$26.2 million in fiscal 1995, compared to net losses of \$29.8 million for fiscal 1994, which included nonrecurring charges of \$48.6 million that were related to the Paxus and Vantage acquisitions.

A four-year financial summary is shown on the following page.

Continuum management attributes fiscal 1995 results to the following:

- Service revenues increased 33% to \$301.8 million. The increase is mostly attributed to a growing outsourcing business and to the inclusion of a full year's results from Vantage. North American customers accounted for 40% of total services revenues, European customers accounted for 22% and the Pacific Rim accounted for 38%.
- Outsourcing revenue increased 95% to \$108.9 million during fiscal 1995.
- License revenues increased 44% to \$21.1 million due to increased sales of VANTAGE-ONE and COLOSSUS.
- Income for fiscal 1995, before nonrecurring charges and income taxes, was \$38.1 million, compared to \$13.9 million in fiscal 1994. The improved performance was due to an increase in service revenue and gross profits and a 16% decrease in marketing and administration expenses to \$50.6 million, more than offsetting the decrease in license revenue and the 18% increase in net interest expense to \$3.8 million. These improved results, especially in the second half of the year, reflect the benefits from the acquisitions and restructuring.

**The Continuum Company, Inc.**  
**Four-Year Financial Summary**  
(\$ Millions, except per share data )

Item	Fiscal Year			
	3/95	3/94	3/93	3/92
Revenue	\$323.5	\$242.9	\$238.9	\$263.6
• Percent change from previous year	33%	2%	(9%)	1%
Income (loss) from continuing operations before taxes	\$38.1	\$(34.7) (a)	\$(1.1)	\$(10.1)
• Percent change from previous year	210%	*	*	*
Net income (loss)	\$26.2	\$(29.8)	\$(4.6)	\$(24.2)
• Percent change from previous year	188%	*	*	*
Earnings (loss) per share	\$1.38	\$(1.79)	\$(0.31)	\$(1.66)
• Percent change from previous year	1.77%	*	*	*

(a) Includes restructuring and other costs of \$32.6 million and purchased research and development charges of nearly \$16 million associated with acquisitions made during fiscal 1994.

### Interim Results

Revenue for the six months ending September 30, 1995 reached \$194.5 million, a 29% increase over \$150.2 million for the same period in 1994. Net income reached \$16.4 million, compared to net income of \$11.9 million for the same period a year ago.

- Service revenue rose 28% to \$180.2 million, of which \$71.2 million was derived from outsourcing services. Service profits reached \$42.5 million, up from \$35.3 million for the same period a year ago.
- License revenue rose nearly 50% to \$13.8 million, primarily due to North American customer sales.

- Marketing and administration expenses remain the same, at 17% of total revenue.

### Revenue Analysis by Product/Service:

INPUT estimates that approximately 59% of Continuum's fiscal 1995 revenue was derived from its various professional services, including customer-funded software development, system installation, education, consulting, product support and enhancements; 34% from systems operations and processing services; and 7% from software licenses.

A three-year summary of source of revenue, as provided by Continuum, appears on the following page.

**The Continuum Company, Inc.**  
**Three-Year Source of Revenue Summary**  
 (\$ Millions)

Product/Service	Fiscal Year					
	3/95		3/94		3/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Services (a)	301.8	93%	\$227.4	94%	\$211.3	88%
Software licenses	21.1	7%	14.7	6%	25.1	11%
Interest income	0.6	--	0.8	--	2.5	1%
Total	\$323.5	100%	\$242.9	100%	\$238.9	100%

(a) Includes maintenance/enhancement services, processing/systems operations and professional services.

### Market Financials

The majority of Continuum's revenue is derived from the insurance industry (65% from life insurance companies and 35% from property and casualty insurance companies). Continuum also has clients in the financial services, health care and other industries.

Continuum's marketing efforts are directed primarily at large and medium-sized life and property and casualty insurance companies in North America, the U.K., Western Europe and the Pacific Rim.

### Geographic Markets

Approximately 38% of Continuum's fiscal 1995 revenue was derived from the U.S., 22% from Europe, 37% from the Pacific Rim and 3% from Canada and other sources. A three-year summary of geographic source of revenue is shown on the following page.

### Acquisitions

In December 1995, Continuum announced an agreement to merge with Hogan Systems, Inc. of Dallas (TX) for a total value of about \$230 million in stock and options. The merger will be accounted for as a pooling of interests.

- Hogan provides professional services and applications software products to financial institutions worldwide. Hogan supports nearly 130 of the world's largest banks.
- The company's products support transaction accounting, relationship management and management information applications.
- Hogan reported revenue of \$92.6 million and net income of \$6.3 million for the fiscal year ending March 31, 1995. For the six months ending September 30, 1995, Hogan had revenue of \$51.1 million and net income of \$4.1 million.
- Hogan will become a wholly owned subsidiary of Continuum with continuing operations in Dallas (TX), Frankfurt (Germany), London (England) and Melbourne (Australia). Combined, Continuum and Hogan will have a customer base of approximately 750 financial services institutions worldwide.

**The Continuum Company, Inc.**  
**Three-Year Geographic Source of Revenue Summary**  
 (\$ Millions)

Geographic Market	Fiscal Year					
	3/95		3/94		3/93	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S.	123.1	38%	\$67.7	28%	\$39.6	17%
Europe (a)	71.3	22%	74.6	31%	93.5	39%
Pacific Rim (b)	118.1	37%	92.8	38%	94.0	39%
Canada and other (c)	11.0	3%	7.8	3%	11.2	5%
Total	\$323.5	100%	\$242.9	100%	\$238.9	100%

- (a) Includes export revenue from the U.S. of approximately \$1.7 million in fiscal 1994, \$12.2 million in fiscal 1993 and \$18.8 million in fiscal 1992.
- (b) Includes export revenue from the U.S. of approximately \$11.2 million in fiscal 1995, \$7.5 million in fiscal 1994 and \$11.0 million in fiscal 1993.
- (c) Includes export revenue from the U.S. of approximately \$7.5 million in fiscal 1995, \$3.3 million in fiscal 1994 and \$2.1 million in fiscal 1993.

In December 1995, Continuum completed the acquisition of SOCS Groupe, SA, a Paris-based software and services company, for approximately \$35 million.

- SOCS is a leading provider of insurance applications software and related services to the French insurance industry. Its primary insurance product is AIA, a client/server insurance administration application supporting both individual and group life and health insurance.
- SOCS has more than 130 insurance customers in Europe, primarily in France.
- With the addition of SOCS' 200 employees, Continuum's European customers will be serviced by a local staff of 1,000.

During 1995, Continuum acquired Pro\*Systems, Inc. of Richmond Heights (OH).

- Pro\*Systems provides health insurance administration software to the U.S. health insurance market. Its products include the Claims\*2000 system.
- Pro\*Systems now operates as the Health Services Division of Continuum.

In May 1995, Continuum acquired The Ra Group Ltd. from Sun Alliance Group Plc for approximately \$9 million.

- The Ra Group Ltd provides systems to insurance brokers in the U.K., predominantly in the property and casualty sector. The company also provides a range of services to insurance brokers, such as updated ratebooks, electronic data interchange (EDI) links to insurance companies, insurance document printing and specialist broker insurance products, and markets insurance-related computer-based training systems and four expert systems, including an expert

underwriting system and three point-of-sale systems for life insurance salesmen.

- Ra Group, headquartered in Halifax (England), has 180 employees and revenues of \$15.1 million for calendar 1994.

In October 1993, Continuum acquired Vantage Computer Systems, Inc. of Wethersfield (CT) from DST Systems, Inc. for approximately four million shares of Continuum common stock.

- Vantage serves the insurance industry with processing services, third-party administration services, software and consulting services. Its key product is the VANTAGE-ONE life insurance administration system.
- This acquisition added approximately 500 employees, located mostly in Kansas City (MO) and Wethersfield (CT).
- Vantage generated approximately \$45 million in revenue during 1993, up from about \$40 million for 1992.
- As a result of the transaction, DST owns approximately 19% of Continuum's outstanding stock.
- Continuum and DST also have entered into an agreement that allows Continuum to purchase processing resources from DST. Continuum expects that this agreement will substantially reduce its data processing costs and will enhance the market appeal of Continuum's outsourcing services. Continuum closed its processing center in Austin (TX) in February 1994.

In August 1993, Continuum acquired Paxus Corporation Limited of Sydney (Australia) for approximately 3.8 million shares of

Continuum stock. The acquisition was accounted for as a pooling of interests.

- Paxus was an international professional services, software, processing/systems operations firm targeting insurance, financial services and other companies throughout Europe and the Pacific.
- As measured by revenues and staff, Paxus was approximately the same size as Continuum.
- The acquisition of Paxus substantially broadened Continuum's customer base and staff in Europe and the Pacific Rim and gave the company several important new product offerings, including LIFE/400, POLISY/400, SISC and CAPSIL. Approximately 220 customers have purchased licenses to Paxus products.
- The acquisition gave Continuum approximately 1,000 new employees, located in Sydney and Melbourne (Australia), Auckland (New Zealand), Singapore, London (England), Oslo (Norway) and Toronto (Canada).
- The operations of Paxus have been merged into Continuum.

## Employees

As of March 31, 1995, Continuum had approximately 3,000 full-time employees. Approximately 1,400 (47%) of these employees were based in North America, 600 (20%) in Europe and 1,000 (33%) in the Pacific Rim.

As of September 1995, the company had approximately 3,300 employees; increases were in North America and Europe.

## Key Products and Services

Continuum's fee-based services business, which currently provides over 93% of the company's total revenue, is built around proprietary applications software systems and emphasizes long-term relationships with customers. Continuum's outsourcing contracts tend to be long-term relationships. The implementation of the software generally requires significant customization to meet the needs of individual customers. Continuum also provides significant enhancement and maintenance services to its software clients.

### *Life Insurance Software Products*

VANTAGE-ONE is a real-time system offering capabilities for: New Business Issue and Automated Underwriting; Product Administration; Agency and Commission Support; and Payout Administration.

- Standalone VANTAGE-ONE components include the VANTAGE-ONE New Business/Underwriting System, the VANTAGE-ONE Administration System (available by product line), the VANTAGE-ONE Distribution Support System and the VANTAGE-ONE Repetitive Payment System.
- All VANTAGE-ONE components are available in both mainframe and local-area network (LAN) versions. During fiscal 1995, Continuum completed the final components of the client/server version of the VANTAGE-ONE software system.

LIFE/70®, LIFE-COMM® III and CLOAS® support batch and on-line processing and provide administrative capabilities to life insurance companies, including billing and collections, agency administration, policy generation and administration and

regulatory reporting. These products have been extensively enhanced and extended since their introduction and currently have product support programs funded by approximately 90 customers.

- LIFE/70 was introduced by Continuum in 1971 and LIFE-COMM III, a similar system, was acquired by Continuum in late 1984. These products have been marketed primarily to U.S. life insurance companies.
- CLOAS was developed in Australia and introduced in the late 1970s by Computations. Most users are located in Australia and Europe.

LIFE/400, acquired with Paxus, is an IBM AS/400-based individual life and pensions administration system for both traditional and unit-linked insurance products. This multilingual, multicurrency system provides a range of client and agent administration services, including policy handling, accounting, claims and termination services and reinsurance.

CAPSIL, also acquired with Paxus, is an individual life and pensions administration system designed for IBM mainframes.

- CAPSIL was specifically created to meet the needs of the European life insurance industry.
- The product supports both traditional and unitized insurance products by providing sales and marketing support, new business and underwriting, client services, premium collection and accounting, agency and commission handling, unit accounting, reinsurance, general ledger, financial reporting, valuation and statutory reporting and system audit and control capabilities.

- CAPSIL is now being used at more than 40 sites across Europe.

The CLIENT/CONTRACT ADMINISTRATION (CCA) System is a large, complex, interactive and on-line administrative and marketing system for life insurance companies, first released in 1987.

- The CCA System is available for IBM and compatible mainframes running under MVS/XA.
- Modules include the CLIENT MANAGEMENT System, the DISTRIBUTION MANAGEMENT System, the PRODUCT MANAGEMENT System and the CONTRACT MANAGEMENT System.

ES/C Life Insurance Products are the result of development projects funded by the CCA Advanced Development Program (described under the Alliances section of this report). These products are collectively marketed under the name CCA2. The products include the following:

- CMS/ES—the Client Management System/Enterprise Solution—is a client management system that allows an insurance company to consolidate information about all of its customers in a single database.
- DMS/ES—the Distribution Management System/Enterprise Solution—performs major functions required for an insurance company to support its distribution systems, including the payment of commissions, new business production reporting, measurement of sales performance and regulatory compliance.
- CAS/ES—the Contract Administration System/Enterprise Solution—performs

the major administrative functions associated with life insurance policies, including new business processing, regulatory reporting and contract administration for a range of traditional and nontraditional insurance policies.

- CHP/ES—the Continuum Host Platform/Enterprise Solution—is the host platform for CMS/ES, DMS/ES and CAS/ES.
- CDP/ES—the Continuum Development Platform/Enterprise Solution—is the development platform for other ES/C products. It provides a set of software development and management tools and can be used by customers for developing and enhancing systems.

#### *Property and Casualty Insurance Software Products*

COGEN is an on-line, real-time, relational database system for property and casualty insurance companies that provides various administrative and marketing capabilities.

- Functions supported include client handling, underwriting, claims management, reinsurance, payables and receivables management, regulatory reporting and various productivity tools.
- COGEN is available for IBM and compatible mainframes operating under MVS/XA and MVS/ESA.
- Continuum has enhanced COGEN to comply with ES/C principles and to add specific functionality for the U.S. market.

COLOSSUS is an artificial intelligence system that assists claims adjusters with the evaluation and settlement of bodily injury claims. The system runs on IBM and compatible mainframes or microcomputers.

POLISY/400, acquired with Paxus, is an IBM AS/400-based underwriting, claims administration and reinsurance system for the fire and general insurance industry, handling both commercial and personal insurance products.

SICS, acquired with Paxus, is a software system designed for the reinsurance processing requirements of the insurance industry in Europe.

- SICS is available for IBM mainframes and RISC 6000 platforms and for HP 9000 and Siemens MX systems.
- Most common reinsurance and claims administration requirements are supported, as well as multicurrency handling of accounting and payments.
- Approximately 58 reinsurance companies have licensed SICS.

### *Workflow Products*

Automated Work Distributor (AWD), originally developed by DST, automates and streamlines clerical workflows for mutual fund companies and other financial services businesses. AWD operates on IBM-compatible workstations and AS/400 servers and combines workflow distribution software with image processing technology.

### *Processing, Systems Operations, Professional and Support Services*

Continuum mainframe software is available to clients as a remote computing service from the DST data center in Kansas City (MO) and Continuum data centers in Sydney (Australia) and Auckland (New Zealand). The company is also combining its software with a range of other services, including systems integration and systems operations.

- KeySource 2000™ is Continuum's outsourcing package, which includes implementation, development and conversion services around standardized software products.
- In December 1995, Continuum signed a seven-year outsourcing agreement valued at approximately \$50 million with PennCorp Financial Group, Inc., whose Operations Center is headquartered in Raleigh (NC). PennCorp's life insurance, annuity and health insurance businesses will be consolidated on Continuum's proprietary software.
- In April 1995, Continuum signed a six-year outsourcing agreement with Allianz Life Insurance Company of North America valued at more than \$45 million. Continuum will provide third-party administration, data processing and software application support for the life insurance policies currently administered by Allianz's Dallas (TX) operation. The agreement with Allianz replaced a smaller, existing contract that would have expired at the end of 1998 and had a remaining contract value of approximately \$10 million.
- During fiscal 1995, Continuum signed a ten-year outsourcing contract with The Holden Group of Los Angeles (CA) valued at more than \$50 million.
- In October 1994, Continuum announced a new outsourcing agreement that extends its arrangement with Financial Holding Corporation through the year 2000. Continuum expects the total value of the contract to exceed \$40 million.
- In September 1994, Continuum announced that Commercial Union Life Insurance Company, a long-time

Continuum outsourcing client, had extended its outsourcing agreement with Continuum for five years. Continuum will recognize more than \$7 million over the life of the contract.

- Other outsourcing clients include Legal and General Life of Australia Limited, Jackson National Life Insurance Company, Royal Financial Services, Harcourt General Insurance Companies (a seven-year, \$50 million systems operations contract), Rural Mutual Insurance Company (a seven-year, \$40 million systems operations contract) and Pearl Assurance of the U.K.

Professional services, which are Continuum's major revenue source, include consulting, installation, maintenance, education, custom software modifications and shared-cost enhancements.

## Clients

U.S. clients using Continuum software include Principal Financial Group, Sun Alliance Insurance Group, Norwich Union Life Insurance Society, Rural Insurance Companies, USF&G, Iowa Farm Bureau, Guarantee Mutual, Legal and General Corporation (Banner Life), Farmer's New World, American States Insurance Company, Fortis Financial Group, GEICO Corporation, Phoenix Home Life (CT), Mutual Life Insurance Company of New York (MONY), St. Paul Fire and Marine Insurance Company, Jackson National Life Insurance Company, Ohio Casualty Insurance Company, Continental Casualty Company, Arabella Mutual Insurance Company of Quincy Massachusetts, Allied Group, Keystone Insurance Company, Royal Indemnity Company, Allianz Life Insurance Company of North America and Metropolitan Property and Casualty Insurance Company.

International clients using Continuum software include Allianz A.G. (Germany), Garantie Mutuelle Des Fonctionnaires (France), Groupama (France), UAP Nederland B.V., Eagle Star Insurance Company (U.K.), National Farmers Union Mutual (U.K.), Avon Insurance (U.K.), General Accident (U.K.), The Sampo Group (Finland), General Accident, Standard Life (Scotland), Independent Order of Foresters (Canada), Grupo National Provincial (Mexico), Asahi Mutual Life Insurance Company (Japan), Zurich Insurance Company (Japan), SUNCORP Insurance & Finance (Australia), GIO (Australia), The Nationwide Group (U.K.), the Woolwich Building Society (U.K.), Swiss Life Insurance and Pensions Company, Union des Assurances de Paris (France), Guardian Re (Switzerland), Hollandia Reinsurance Company Limited (South Africa), UAP Nederland B.V. (Netherlands), Bank of Scotland, Tranquilidade (Portugal) and Gerling-Konzern Zentrale Verwaltungs-GmbH (Germany).

## Marketing and Sales

Continuum markets its products and services through a direct sales force.

Continuum has a separate sales staff in North America dedicated to pursuing outsourcing business.

## Alliances

The Advanced Development Program (ADP), introduced in 1989, was a cooperative venture between Continuum and three of its major customers to fund advanced CCA architectural enhancements during the next five years. Customers participating in ADP include Principal Financial Group, Sun Alliance Insurance Group and Norwich Union Life Insurance Society.

- Development projects funded by ADP have resulted in life insurance ES/C software products collectively known as CCA2. The products can be linked with other insurance company software to provide an integrated, enterprise-wide system.
- Continuum has recognized approximately \$58 million in revenue from the ADP since its inception, including \$19 million in fiscal 1991, \$22 million in fiscal 1992, \$15 million in fiscal 1993 and \$2 million in fiscal 1994. No further revenue is expected from the ADP.

Continuum announced the formation of an alliance with The Liberty Corporation of Greenville, South Carolina to offer administration services to the life insurance industry.

- The alliance will combine the operations of Continuum Administrative Services Corporation, a Continuum subsidiary that specializes in the third-party administration services using Continuum software, with those of Liberty Insurance Services Corporation, a subsidiary of The Liberty Corporation which also specializes in third-party administration services.

- The alliance will be owned 60% by Continuum and 40% by The Liberty Corporation.
- Fidelity and Guaranty Life Insurance Company (F&G) of Baltimore (MD) will be the founding customer of the alliance. The Alliance will administer the entire block of F&G Life policies, including third-party administration services, data processing, application programming and support. The F&G Life contract is expected to generate over \$80 million of revenue for the alliance over the next eight years.

In October 1993, Continuum announced a major contract with AXA Japan to develop a Japanese version of Continuum's LIFE/400 product.

### Competitors

Major outsourcing competitors include Electronic Data Systems and IBM.

Software and professional services competitors include Policy Management Systems.

# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

January 1995

## The Continuum Company, Inc.

**Chairman:** Ronald C. Carroll  
**President & CEO:** W. Michael Long  
9500 Arboretum Boulevard  
Austin, TX 78759-6399  
**Phone:** (512) 345-5700  
**Fax:** (512) 338-7041

---

Status:	Public
Employees:	2,700 (12/94)
Revenue:	\$242,949,000
Fiscal Year End:	3/31/94

---

### Key Points

- The Continuum Company (Continuum) is an international professional services, outsourcing (systems operations) and software company that primarily targets life and property and casualty insurance companies.
- The acquisition of Paxus Corporation Limited in August 1993 added several new life and general insurance software products and approximately 220 customers, increasing Continuum's already substantial presence in Europe and giving the company a strong position in Australia, New Zealand, Japan and Asia.
- The acquisition of Vantage Computer Systems, Inc. from DST Systems in September 1993 brought Continuum the VANTAGE-ONE® life insurance administration software system, significant new outsourcing revenues and a substantial increase in the company's North American life insurance customer base.
- Continuum has also entered into a strategic agreement with DST to provide processing services through DST's facilities in Kansas City (MO). Continuum's data processing facilities in Austin (TX) were closed in February 1994.

- Continuum has successfully expanded into the outsourcing (systems operations) arena. During fiscal 1994, the company signed new multiyear outsourcing contracts totaling more than \$150 million. For the quarter ending September 30, 1994 revenue from outsourcing customers was \$24.8 million (33% of total revenue).

### Company Description

Continuum, incorporated in 1968, provides applications software products, associated professional services, systems operations and processing services primarily to the life insurance, general insurance (property and casualty) and reinsurance industry.

- Outsourcing services offered by the company range from providing a customer with remote processing of a single insurance application to the complete replacement of a customer's data processing department.
- The software systems marketed by Continuum automate the administrative functions of insurance companies, such as issuing policies, paying agents' commissions and complying with complex government regulations and reporting requirements.

### Organization and Structure

In North America, in addition to its headquarters office in Austin (TX) and an office in Scarborough (Ontario, Canada), Continuum's Vantage Computer Systems subsidiary has offices in Wethersfield (CT) and Kansas City (MO).

Principal operating and sales facilities in Europe are located in Camberley (England) and Oslo (Norway). Other European administrative and sales offices are in Copenhagen (Denmark), Homburg (Germany), Paris (France), Utrecht (Netherlands), Aarau (Switzerland) and Lisbon (Portugal).

Principal facilities for Pacific Rim operations are located in Sydney and Melbourne (Australia) and Auckland (New Zealand). Other Pacific Rim offices are in Tokyo (Japan), Singapore and Hong Kong.

Continuum's data processing facilities in Austin (TX) were closed in February 1994 and processing services are now provided through DST facilities in Kansas City (MO). Continuum operates large data centers in Sydney (Australia) and Auckland (New Zealand). Other data processing facilities are in Tokyo (Japan) and Camberley (England).

### Company Strategy

Continuum's objective is to be the preferred provider of software products and implementation and consulting services to the global insurance industry.

The company is responding to significant changes in the insurance industry with the following strategies:

- *Flexible Products*—Continuum has extended its commitment to an open, integrated systems environment through Enterprise Solutions by Continuum™ (ES/C), its strategy for delivering software in smaller components that can be readily integrated with a customer's existing and future systems. ES/C includes a modular, open architecture approach to software development. Various functions that would traditionally be inseparable parts of a single large software system are divided into discrete products that can be installed and used one at a time or in combination. Open architecture principles allow these separate software products to be readily integrated not only with one another, but also with customer's existing and future systems from Continuum or third parties.
- *Geographic and Product Diversity*—Since the early 1980s, Continuum has pursued a strategy of establishing a strong local marketing presence and customer support capability in each of the three major insurance geographies—North America, Europe and the Pacific Rim—and has since expanded its geographic presence and product lines through acquisitions and development programs.
- *Outsourcing Provider*—Continuum believes that its insurance expertise, established customer base and broad insurance product offerings position it to

pursue outsourcing (systems operations) contracts with insurance companies.

### Financials

Continuum's financials have been restated to reflect the pooling of interests acquisition of Paxus. The results also reflect the Vantage merger, which was accounted for as a purchase, since September 30, 1993.

Continuum's fiscal 1994 revenue reached \$242.9 million, a 2% increase over fiscal 1993 restated revenue of \$238.9 million. Net losses of \$29.8 million for fiscal 1994 include nonrecurring charges of \$48.6 million that were related primarily to the Paxus and Vantage acquisitions.

- The previous year, before the Paxus acquisition, Continuum reported revenue of \$123.8 million.
- Income for fiscal 1994 before nonrecurring charges and income tax was \$13.9 million, all earned in the second half of the year. The previous year, Continuum reported income of \$9.4 million, which was reduced to a loss of \$1.1 million after adjusting for the combination with Paxus.
- A three-year financial summary is shown on the following page.

Continuum management attributes fiscal 1994 results to the following:

- Service revenues increased 8% to \$227.4 million. Vantage revenues more than offset declines in Paxus service revenue.
- License revenues decreased 41% to \$14.7 million due to reduced demand for Continuum's older products and due to Continuum's focus on restructuring its businesses, including integration of products and combining of sales forces.
- Nonrecurring charges of approximately \$48.6 million for fiscal 1994 include a \$16 million charge for purchased research and development resulting from the value assigned to the software development activities in process at Vantage. These charges also include a \$23.7 million restructuring charge in connection with the Paxus and Vantage acquisitions for restructuring and realigning global resources, including costs associated with the consolidation of facilities and data centers, staff reductions, adjustments of the carrying value of certain assets and other one-time charges.
- Income for fiscal 1994, before nonrecurring charges and income taxes was \$13.9 million, compared to a loss of \$1.1 million in fiscal 1993. The improved performance was due to an increase in service revenue and gross profits and a 16% decrease in marketing and administration expenses to \$50.6 million, more than offsetting the decrease in license revenue and the 18% increase in net interest expense to \$3.8 million. These improved results, especially in the second half of the year, reflect the benefits from the acquisitions and restructuring.

**The Continuum Company, Inc.**  
**Three-Year Financial Summary**  
(\$ Millions, except per share data )

Item	Fiscal Year		
	3/94	3/93	3/92
Revenue	\$242.9	\$238.9	\$263.6
• Percent change from previous year	2%	(9%)	1%
Income (loss) from continuing operations before taxes	\$(34.7)	\$(1.1)	\$(10.1)
• Percent change from previous year	*	*	*
Net income (loss)	\$(29.8)	\$(4.6)	\$(24.2)
• Percent change from previous year	*	*	*
Earnings (loss) per share	\$(1.79)	\$(0.31)	\$(1.66)
• Percent change from previous year	*	*	*

(a) Includes restructuring and other costs of \$32.6 million and purchased research development charges of nearly \$16 million associated with acquisitions made during fiscal 1994.

*Revenue Analysis by Product/Service:*

INPUT estimates approximately 74% of Continuum's fiscal 1994 revenue was derived from its various professional services, including customer funded software development, system installation,

education, consulting, product support and enhancements, 20% from systems operations and processing services and 6% from software licenses.

A three-year summary of source of revenue, as provided by Continuum, follows:

**The Continuum Company, Inc.**  
**Three-Year Source of Revenue Summary**  
(\$ Millions)

Product/Service	Fiscal Year					
	3/94		3/93		3/92	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
Services (a)	\$227.4	94%	\$211.3	88%	\$241.2	91%
Software licenses	14.7	6%	25.1	11%	20.5	8%
Interest income	0.8	--	2.5	1%	1.9	1%
Total	\$242.9	100%	\$238.9	100%	\$263.6	100%

(a) Includes maintenance/enhancement services, processing/systems operations and professional services.

### Interim Results

Revenue for the nine months ending December 31, 1994 reached \$232.7 million, a 35% increase over \$172.1 million for the same period in 1993. Net income reached \$18.7 million, compared to net losses of \$35.2 million for the same period a year ago. The prior year's period includes the \$48.6 million in nonrecurring charges previously discussed.

- Service revenue rose 35% to \$217.3 million. Service profits were \$35.3 million, up significantly from the same period in 1993.
- License revenue rose nearly 44% to \$15.1 million primarily to North American customers and VANTAGE-ONE and COLOSSUS™ licenses.
- Marketing and administration expenses decreased as a percent of revenue to 17% from 21% a year ago.

### Market Financials

The majority of Continuum's revenue is derived from the insurance industry (65% from life insurance companies and 35% from property and casualty insurance companies). Continuum also has clients in the financial services, health care and other industries.

Continuum's marketing efforts are directed primarily at large and medium-sized life and property and casualty insurance companies in North America, the U.K., Western Europe and the Pacific Rim.

### Geographic Markets

Approximately 28% of Continuum's fiscal 1994 revenue was derived from the U.S., 31% from Europe, 38% from the Pacific Rim and 3% from Canada and other sources.

A three-year summary of geographic source of revenue follows:

**The Continuum Company, Inc.  
Three-Year Geographic Source of Revenue Summary  
(\$ Millions)**

Geographic Market	Fiscal Year					
	3/94		3/93		3/92	
	Revenue \$	Percent of Total	Revenue \$	Percent of Total	Revenue \$	Percent of Total
U.S.	\$67.7	28%	\$39.6	17%	\$49.0	19%
Europe (a)	74.6	31%	93.5	39%	96.0	36%
Pacific Rim (b)	92.8	38%	94.0	39%	108.3	41%
Canada and other (c)	7.8	3%	11.2	5%	10.3	4%
Total	\$242.9	100%	\$238.9	100%	\$263.6	100%

(a) Includes export revenue from the U.S. of approximately \$1.7 million in fiscal 1994, \$12.2 million in fiscal 1993 and \$18.8 million in fiscal 1992.

(b) Includes export revenue from the U.S. of approximately \$7.5 million in fiscal 1994, \$11.0 million in fiscal 1993 and \$1.7 million in fiscal 1992.

(c) Includes export revenue from the U.S. of approximately \$3.3 million in fiscal 1994, \$2.1 million in fiscal 1993 and \$0.5 million in fiscal 1992.

## Acquisitions

In October 1993, Continuum acquired Vantage Computer Systems, Inc. of Wethersfield (CT) from DST Systems, Inc. for approximately four million shares of Continuum common stock.

- Vantage serves the insurance industry with processing services, third-party administration services, software and consulting services. Its key product is the VANTAGE-ONE life insurance administration system.
- This acquisition added approximately 500 employees located primarily in Kansas City (MO) and Wethersfield (CT).
- Vantage generated approximately \$45 million in revenue during 1993, up from about \$40 million for 1992.
- As a result of the transaction, DST owns approximately 19% of Continuum's outstanding stock.
- Continuum and DST also have entered into an agreement that allows Continuum to purchase processing resources from DST. Continuum expects this agreement will substantially reduce its data processing costs and will enhance the market appeal of Continuum's outsourcing services. Continuum closed its processing center in Austin (TX) in February 1994.

In August 1993, Continuum acquired Paxus Corporation Limited of Sydney (Australia) for approximately 3.8 million shares of Continuum stock. The acquisition was accounted for as a pooling of interests.

- Paxus was an international professional services, software, processing/systems operations firm targeting insurance, financial services and other companies throughout Europe and the Pacific.
- As measured by revenues and staff, Paxus was approximately the same size as Continuum.

- The acquisition of Paxus substantially broadened Continuum's customer base and staff in Europe and the Pacific Rim and gave the company several important new product offerings, including LIFE/400, POLISY/400, SISC and CAPSIL. Approximately 220 customers have purchased licenses to Paxus products.
- The acquisition gave Continuum approximately 1,000 new employees located primarily in Sydney and Melbourne (Australia), Auckland (New Zealand), Singapore, London (England), Oslo (Norway) and Toronto (Canada).
- The operations of Paxus have been merged into Continuum.

## Employees

As of March 31, 1994, Continuum had approximately 2,500 full-time employees. Approximately 1,100 (45%) of these employees were based North America, 550 (24%) in Europe and 850 (31%) in the Pacific Rim.

As of December 1994, the company had approximately 2,700 employees.

## Key Products and Services

Continuum's fee-based services business, which currently provides over 93% of the company's total revenue, is built around proprietary applications software systems and emphasizes long-term relationships with customers. Continuum's outsourcing contracts tend to be long-term relationships. The implementation of the software generally requires significant customization to meet the needs of individual customers. Continuum also provides significant enhancement and maintenance services to its software clients.

### *Continuum Life Insurance Products:*

VANTAGE-ONE is a real-time system offering capabilities for: New Business Issue and Automated Underwriting; Product Administration; Agency and Commission Support; and Payout Administration. Most VANTAGE-ONE

components are available in both mainframe and local-area network (LAN) versions.

LIFE/70®, LIFE-COMM® III and CLOAS® support batch and on-line processing and provide administrative capabilities to life insurance companies, including billing and collections, agency administration, policy generation and administration and regulatory reporting. These products have been extensively enhanced and extended since their introduction and currently have product support programs funded by approximately 90 customers.

- LIFE/70, introduced by Continuum in 1971, and LIFE-COMM III, a similar system, was acquired by Continuum in late 1984. These products have been marketed primarily to U.S. life insurance companies.
- CLOAS was developed in Australia and introduced in the late 1970s by Computations. Most users are located in Australia and Europe.

LIFE/400, acquired with Paxus, is an IBM AS/400-based individual life and pensions administration system for both traditional and unit-linked insurance products. This multilingual, multicurrency system provides a range of client and agent administration services, including policy handling, accounting, claims and termination services and reinsurance.

CAPSIL, also acquired with Paxus, is an individual life and pensions administration system designed for IBM mainframes.

- CAPSIL was specifically created to meet the needs of the European life insurance industry.
- The product supports both traditional and unitized insurance products by providing sales and marketing support, new business and underwriting, client services, premium collection and accounting, agency and commission handling, unit accounting, reinsurance, general ledger, financial reporting, valuation and

statutory reporting and system audit and control capabilities.

- CAPSIL is now being used at more than 40 sites across Europe.

The CLIENT/CONTRACT ADMINISTRATION (CCA) System is a large, complex, interactive and on-line administrative and marketing system for life insurance companies first released in 1987.

- The CCA System is available for IBM and compatible mainframes running under MVS/XA.
- Modules include the CLIENT MANAGEMENT System, DISTRIBUTION MANAGEMENT System, the PRODUCT MANAGEMENT System and the CONTRACT MANAGEMENT System.

ES/C Life Insurance Products are the result of development projects funded by the CCA Advanced Development Program (described under the Alliances section of this report). These products are collectively marketed under the name CCA2. The products include the following:

- CMS/ES—The Client Management System/Enterprise Solution—is a client management system that allows an insurance company to consolidate information about all of its customers in a single database.
- DMS/ES—The Distribution Management System/Enterprise Solution—performs major functions required for an insurance company to support its distribution systems, including the payment of commissions, new business production reporting, measurement of sales performance and regulatory compliance.
- CAS/ES—The Contract Administration System/Enterprise Solution—performs the major administrative functions associated with life insurance policies, including new business processing, regulatory reporting and contract

administration for a range of traditional and non-traditional insurance policies.

- **NBW/ES—The New Business Workstation/Enterprise Solution**—implements the new business function of CAS/ES on a workstation server. New business refers to the process of issuing new insurance policies.
- **CHP/ES—The Continuum Host Platform/Enterprise Solution**—is the host platform for CMS/ES, DMS/ES and CAS/ES.
- **CDP/ES—The Continuum Development Platform/Enterprise Solution**—is the development platform for other ES/C products. It provides a set of software development and management tools and can be used by customers for developing and enhancing systems.

### *Continuum Property and Casualty Products:*

COGEN is an on-line, real-time, relational database system for property and casualty insurance companies that provides various administrative and marketing capabilities.

- Functions supported include client handling, underwriting, claims management, reinsurance, payables and receivables management, regulatory reporting and various productivity tools.
- COGEN is available for IBM and compatible mainframes operating under MVS/XA and MVS/ESA.
- Continuum has enhanced COGEN to comply with ES/C principles and to add specific functionality for the U.S. market.

COLOSSUS is an artificial intelligence system that assists claims adjusters with the evaluation and settlement of bodily injury claims. The system runs on IBM ES/3090 systems and MS-DOS-compatible PCs.

POLISY/400, acquired with Paxus, is an IBM AS/400-based underwriting, claims administration and reinsurance system or the fire and general insurance industry, handling both commercial and personal insurance products.

SICS, acquired with Paxus, is a software system designed for the reinsurance processing requirements of the insurance industry in Europe.

- SICS is available for IBM mainframes and RISC 6000 platforms and for HP 9000 and Siemens MX systems.
- Most common reinsurance and claims administration requirements are supported, as well as multicurrency handling of accounting and payments.
- Approximately 58 reinsurance companies have licensed SICS.

### *Workflow Products*

Automated Work Distributor (AWD), originally developed by DST, automates and streamlines clerical workflows for mutual fund companies and other financial services businesses. AWD operates on IBM compatible workstations and AS/400 servers and combines workflow distribution software with image processing technology.

### *Processing, Systems Operations, Professional and Support Services:*

Continuum mainframe software is available to clients as a remote computing service from the DST data center in Kansas City (MO) and Continuum data centers in Sydney (Australia) and Auckland (New Zealand). The company is also combining its software with a range of other services, including systems integration and systems operations.

- KeySource 2000™ is Continuum's outsourcing package, which includes implementation,

development and conversion services around standardized software products.

- In October 1994, Continuum announced a new outsourcing agreement that extends its arrangement with Financial Holding Corporation through the year 2000. Continuum expects the total value of the contract to exceed \$40 million.
- In September 1994, Continuum announced that Commercial Union Life Insurance Company, a long-time Continuum outsourcing client, extended its outsourcing agreement with Continuum for five years. Continuum will recognize more than \$7 million over the life of the contract.
- In early 1994, Continuum signed a new five-year, \$14 million outsourcing contract with Allianz Life Insurance Company of North America that amends and replaces an existing contract from February 1993. Continuum is consolidating policies onto a single integrated policy administration system and will be installing VANTAGE-ONE in a LAN environment. Continuum will also integrate VANTAGE-ONE with the Client Management System and Distribution Management System.
- Other outsourcing clients include Royal Financial Services, Harcourt General Insurance Companies (seven-year, \$50 million systems operations contract), Rural Mutual Insurance Company (seven-year, \$40 million systems operations contract) and Pearl Assurance of the U.K.

Professional services, which provide the major revenue source to Continuum, include consulting, installation, maintenance, education, custom software modifications and shared-cost enhancements.

### Clients

U.S. clients using Continuum software include Principal Financial Group, Sun Alliance Insurance Group, Norwich Union Life Insurance Society, Rural Insurance Companies, USF&G, Iowa Farm

Bureau, Guarantee Mutual, Legal and General Corporation (Banner Life), Farmer's New World, American States Insurance Company, Fortis Financial Group, GEICO Corporation, Phoenix Home Life (CT), Mutual Life Insurance Company of New York (MONY), St. Paul Fire and Marine Insurance Company, Jackson National Life Insurance Company, Ohio Casualty Insurance Company

International clients using Continuum software include Allianz A.G. (Germany), Garantie Mutuelle Des Fonctionnaires (France), Groupama (France), UAP Nederland B.V., Eagle Star Insurance Company (U.K.), National Farmers Union Mutual (U.K.), Avon Insurance (U.K.), The Sampo Group (Finland), General Accident, Standard Life (Scotland), Independent Order of Foresters (Canada), Grupo Nacional Provincial (Mexico), Asahi Mutual Life Insurance Company (Japan), SUNCORP Insurance & Finance (Australia), GIO (Australia), The Nationwide Group (U.K.), the Woolwich Building Society (U.K.), Swiss Life Insurance and Pensions Company, Union des Assurances de Paris (France), Guardian Re (Switzerland), Hollandia Reinsurance Company Limited (South Africa), UAP Nederland B.V. (Netherlands), Bank of Scotland

### Marketing and Sales

Continuum markets its products and services through a direct sales force.

Continuum has a separate sales staff in North America dedicated to pursuing outsourcing business.

### Alliances

The Advanced Development Program (ADP), introduced in 1989, was a cooperative venture between Continuum and three of its major customers to substantially fund advanced CCA architectural enhancements during the next five years. Customers participating in ADP include Principal Financial Group, Sun Alliance Insurance Group and Norwich Union Life Insurance Society.

- Development projects funded by ADP have resulted in life insurance ES/C software products collectively known as CCA2. The products can be linked with other insurance company software to provide an integrated, enterprise-wide system.
- Continuum has recognized approximately \$58 million in revenue from the ADP since its inception, including \$19 million in fiscal 1991, \$22 million in fiscal 1992, \$15 million in fiscal 1993 and \$2 million in fiscal 1994. No further revenue is expected from the ADP.

In October 1993, Continuum announced a major contract with AXA Japan to develop a Japanese version of Continuum's LIFE/400 product.

### Competitors

Major outsourcing competitors include Electronic Data Systems and IBM.

Software and professional services competitors include Policy Management Systems.

**THE CONTINUUM  
COMPANY, INC.**

9500 Arboretum Boulevard  
Austin, TX 78759-6399  
Phone: (512) 345-5700  
Fax: (512) 338-7041

Chairman:	Ronald C. Carroll
President & CEO:	W. Michael Long
Status:	Public Corporation
Total Employees:	2,500 (11/93)
Total Revenue:	\$123,823,000
Fiscal Year End:	3/31/93

---

**Key Points**

- The Continuum Company (Continuum) is an international professional services and software company that primarily targets life and property and casualty insurance companies.
- The acquisition of Paxus Corporation Limited in August 1993 added approximately 220 customers, increasing Continuum's already substantial presence in Europe and gives the company a strong position in Australia, New Zealand, Japan and Asia.
- In October 1993, Continuum acquired Vantage Computer Systems, Inc. from DST Systems, enhancing Continuum's commitment to the North American life insurance industry and providing a strategic alliance with DST.
- Continuum's strategy includes expansion into the outsourcing (systems operations) arena. Two recently announced outsourcing contracts with Harcourt General Insurance Company and Rural Mutual Insurance Company are expected to generate revenues of \$90 million over the next seven years, starting in the December quarter.

**Company Description**

The Continuum Company, Inc. (Continuum), incorporated in 1968, provides applications software products, associated professional services, and remote computing services primarily to the life, property and casualty insurance industry.

The company's principal product, the CLIENT/CONTRACT ADMINISTRATION™ (CCA) system, supports the administration and marketing of individual life, health and annuity insurance policies.

The acquisitions of Paxus and Vantage during 1993 have made Continuum a \$270 to \$280 million company.

**Strategy**

Continuum's objective is to be the preferred provider of software products and implementation and consulting services to the global life and non-life insurance industry.

The company is responding to significant changes in the insurance industry with the following strategies:

- **Flexible Products:** Continuum has extended its commitment to an open, integrated systems environment by announcing Enterprise Solutions by Continuum™ (ES/C), a new strategy for delivering software in smaller components that can be readily integrated with a customer's existing and future systems. The ES/C strategy includes developing standardized interfaces to the various modules of CCA and to Continuum's other products to permit the integration of Continuum products with each other and with in-house and third-party systems.
- **Geographic and Product Expansion:** Continuum first expanded outside the U.S. in 1982, and has since expanded its geographic presence and product lines through acquisitions and development programs.
- **Outsourcing Provider:** Continuum believes that its insurance expertise, established customer base, and broad insurance product offerings position it to pursue outsourcing (systems operations) contracts with insurance companies.

**Financials**

Continuum's fiscal 1993 revenue was \$123.8 million, a 3% decrease from fiscal 1992 revenue of \$127.4 million. Net income was \$7.2 million, compared to \$8.6 million in fiscal 1992.

A five-year financial summary follows:

**THE CONTINUUM COMPANY, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	3/93	3/92	3/91	3/90	3/89
Revenue	\$123.8	\$127.4	\$112.7	\$80.1	\$66.1
• Percent increase (decrease) from previous year	(3%)	13%	41%	21%	10%
Income before taxes	\$9.4	\$14.9	\$15.4	\$8.5	\$1.9
• Percent increase (decrease) from previous year	(37%)	(4%)	81%	349%	(53%)
Net income	\$7.2	\$8.6	\$8.9	\$5.5	\$1.2
• Percent increase (decrease) from previous year	(17%)	(3%)	62%	362%	(52%)
Earnings per share	\$0.67	\$0.81	\$0.93	\$0.63	\$0.14
• Percent increase (decrease) from previous year	(17%)	(13%)	48%	350%	(52%)

Continuum management attributes fiscal 1993 results to the following:

- License revenues reached \$14.6 million in fiscal 1993, an 82% increase over fiscal 1992. Approximately 43% of fiscal 1993 license revenues were attributed to property and casualty software systems, compared with approximately 85% in fiscal 1992. License revenue from Europe and the Pacific Rim accounted for 62% of the license revenue in fiscal 1993, compared to 67% of license revenues in fiscal 1992.
- Service revenues decreased 8% due to a decline in revenues associated with the Advanced Development Program of \$7.2 million and a decline in revenues associated with an Australian R&D venture of \$5.2 million. The decrease in revenue for these development projects was partially offset by increased revenue from contracts in France and Japan to adapt CCA for customer needs in these countries.
- Product research and development expenditures, net of capitalized costs, were approximately \$41.1 million (33% of revenue) in fiscal 1993, \$40.0 million (31% of revenue) in fiscal 1992 and \$39.8 million (35% of revenue) in fiscal 1991. Virtually all of Continuum's research and development expenditures have been funded by the company's customers.

- Marketing and administration expenses increased nearly 10%, from \$ 27.5 million in fiscal 1992 to \$30.1 million in fiscal 1993, due to increased worldwide sales and marketing investments.

Revenue for the six months ending September 30, 1993 was \$107.4 million, compared to \$122.9 million for the same period in 1992. Net losses for the period were \$39.4 million and include restructuring and other nonrecurring charges of \$48.6 million primarily associated with the acquisitions of Paxus and Vantage.

- Service revenue was \$100.4 million, a decrease from \$108.8 million for the same period a year ago. Declines were attributed to the near completion of Continuum's Advanced Development Program and an Australian research and development venture and decreases in services revenues from the Paxus acquired businesses in New Zealand, Australia and Europe. Service revenues have increased relating to contracts in France and Japan to adapt Continuum products to customer needs in those countries.
- Service revenues are expected to increase in the December quarter due to the inclusion of the operations of Vantage and the initial benefits from the combined and restructured operation of Continuum and Paxus in the Pacific Rim and Europe.

#### **Market Financials**

One hundred percent of Continuum's revenue is derived from the insurance industry. Approximately 65% of fiscal 1993 revenue was derived from life insurance companies and 35% from property and casualty insurance companies.

Continuum's marketing efforts are directed primarily at large and medium-sized life and property and casualty insurance companies in North America, the U.K., Western Europe, Japan and Australia.

#### **Geographic Markets**

Approximately 32% of Continuum's fiscal 1993 revenue was derived from U.S. customers, 44% from Europe, 22% from the Pacific (Australia and Japan), and 2% from Canada and other international sources. A three-year geographical source of revenue summary follows:

**THE CONTINUUM COMPANY, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
(\$ millions)

ITEM	FISCAL YEAR					
	3/93		3/92		3/91	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$39.6	32%	\$49.0	38%	\$56.0	50%
Europe (a)	54.7	44%	53.8	42%	43.6	39%
Pacific (b)	27.4	22%	24.1	19%	12.9	11%
Canada and other	2.1	2%	0.5	--	0.2	--
<b>TOTAL *</b>	<b>\$123.8</b>	<b>100%</b>	<b>\$127.4</b>	<b>100%</b>	<b>\$112.7</b>	<b>100%</b>

\* Differences due to rounding

- (a) Includes export revenue from the U.S. of approximately \$12.2 million in fiscal 1993, \$18.8 million in fiscal 1992, and \$20.5 million in fiscal 1991.
- (b) Includes export revenue from the U.S. of approximately \$11.0 million in fiscal 1993, \$1.7 million in fiscal 1992, and \$2.4 million in fiscal 1991.

In addition to the headquarters office in Austin, Continuum has international offices in Paris (France), Homburg (Germany), Camberley (England), Oslo (Norway), Copenhagen (Denmark), Monfoort (Netherlands), North Sydney (Australia) and Tokyo (Japan).

## Acquisitions

In October 1993, Continuum acquired Vantage Computer Systems, Inc. of Wethersfield (CT) from DST Systems, Inc. for approximately four million shares of Continuum common stock.

- Vantage serves the insurance industry with processing services, third-party administration services, software and consulting services. Its key products are VANTAGE-ONE for the life insurance industry and VANTAGE P&C for the property and casualty insurance industry.
- This acquisition adds approximately 500 employees located primarily in Kansas City (MO) and Wethersfield (CT).
- Vantage expects revenue of about \$45 million for 1993, up from about \$40 million for 1992.

- As a result of the transaction, DST will own approximately 19% of Continuum's outstanding stock.
- Continuum and DST also have entered into an agreement that allows Continuum to purchase processing resources from DST. Continuum expects this agreement will substantially reduce its data processing costs and will enhance the market appeal of Continuum's outsourcing services.

In August 1993, Continuum acquired 98% of Paxus Corporation Limited of Sydney (Australia) for approximately 3.8 million shares of Continuum stock. The remaining shares of Paxus stock will be acquired through a routine legal procedure in Australia. The acquisition will be accounted for as a pooling of interests.

- Paxus is an international professional services, software, processing/systems operations firm targeting insurance, financial services and other companies throughout Europe and the Pacific.
- As measured by revenues and staff, Paxus is approximately the same size as Continuum.
- Continuum management is in the process of combining the operations of Paxus with Continuum.
  - Space consolidations are underway in Melbourne, Sydney, London, and Austin. The Paxus data center in Sydney is being consolidated into Continuum's Sydney facility.
  - The Paxus corporate office has been closed, with its activities now being conducted out of Austin. Neil R. Cullimore, formerly Paxus' chief executive officer, has joined Continuum's executive staff and relocated to Austin.
- Immediate revenue opportunities include cross selling of Paxus and Continuum products and services to the larger combined customer base. Continuum also expects to offer new combinations of Continuum and Paxus products and services to new markets.

## Employees

As of March 31, 1993, Continuum had 1,109 full-time employees (577 in the U.S., 274 in Europe, and 258 in Australia), segmented as follows:

Marketing, sales and general administration	200
Data processing operations	83
Systems development, custom systems modification, systems installation and consulting	<u>826</u>
	1,109

As a result of the acquisitions of Paxus and Vantage, Continuum currently has approximately 2,500 employees worldwide.

### Key Products and Services

INPUT estimates that over 85% of Continuum's fiscal 1993 revenue was derived from its various professional services, including maintenance fees and enhancements, and 12% was derived from software licenses. The remainder of revenue was derived from systems operations/processing services and interest income.

A three-year summary of source of revenue, as provided by Continuum, follows:

**THE CONTINUUM COMPANY, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	3/93		3/92		3/91	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Services (a)	\$108.3	87%	\$117.9	93%	\$105.5	94%
Software licenses	14.5	12%	8.0	6%	7.2	6%
Interest income	1.0	1%	1.5	1%	--	--
<b>TOTAL</b>	<b>\$123.8</b>	<b>100%</b>	<b>\$127.4</b>	<b>100%</b>	<b>\$112.7</b>	<b>100%</b>

(a) Includes maintenance/enhancement services, processing/systems operations, and professional services.

Continuum's fee-based services business, which currently provides over 87% of the company's total revenue, is built around proprietary applications software products and emphasizes long-term relationships with customers. The implementation of the software generally requires significant customization to meet the needs of individual customers. Continuum also provides significant enhancement and maintenance services to its software clients.

*Continuum Life Insurance Products:*

LIFE/70, LIFE-COMM III, and CLOAS support batch and on-line processing and provide administrative capabilities to life insurance companies, including billing and collections, agency administration, policy generation and administration and regulatory reporting. These products have been extensively enhanced and extended since their introduction and currently have product support programs funded by approximately 90 customers.

- LIFE/70, introduced by Continuum in 1971, and LIFE-COMM III, a similar system, was acquired by Continuum in late 1984. These products have been marketed primarily to U.S. life insurance companies.
- CLOAS was developed in Australia and introduced in the late 1970s by Computations. Most users are located in Australia and Europe.

The CLIENT/CONTRACT ADMINISTRATION (CCA) System is a large, complex, interactive and on-line administrative and marketing system for life insurance companies first released in 1987.

- The CCA System is available for IBM and compatible mainframes running under MVS/XA. Modules include the CLIENT MANAGEMENT System, DISTRIBUTION MANAGEMENT System, the PRODUCT MANAGEMENT System and the CONTRACT MANAGEMENT System.
- As of March 31, 1993, seven customers were using the CLIENT MANAGEMENT module, nine customers were using the DISTRIBUTION MANAGEMENT module and three customers were using all four modules of CCA.

The Advanced Development Program (ADP), introduced in 1989, is a cooperative venture between Continuum and three of its major customers to substantially fund advanced CCA architectural enhancements during the next five years. Customers participating in ADP include Principal Financial Group, Sun Alliance Insurance Group and Norwich Union Life Insurance Society.

- Development projects funded by ADP have resulted in life insurance ES/C software products collectively known as CCA2. The products can be linked with other insurance company software to provide an integrated, enterprise-wide system.
- CMS/ES--The Client Management System/Enterprise Solution--is a client management system that allows an insurance company to

consolidate information about all of its customers in a single database.

- DMS/ES--The Distribution Management System/Enterprise Solution--performs major functions required for an insurance company to support its distribution systems, including the payment of commissions, new business production reporting, measurement of sales performance, and regulatory compliance.
- CAS/ES--The Contract Administration System/Enterprise Solution--performs the major administrative functions associated with life insurance policies, including new business processing, regulatory reporting, and contract administration for a range of traditional and non-traditional insurance policies.
- NBW/ES--The New Business Workstation/Enterprise Solution--implements the new business function of CAS/ES on a workstation server. New business refers to the process of issuing new insurance policies.
- CHP/ES--The Continuum Host Platform/Enterprise Solution is the host platform for CMS/ES, DMS/ES, and CAS/ES.
- CDP/ES--The Continuum Development Platform/Enterprise Solution--is the development platform for other ES/C products. It provides a set of software development and management tools, and can be used by customers for developing and enhancing systems.
- Continuum also offers two non-industry specific ES/C products as follows:
  - CWP/ES--The Continuum Workstation Platform/Enterprise Solution--is a technical platform that enables customers to adopt cooperative processing. CWP/ES resides primarily on the server and passes data and programs between the host and the client.
  - BPM/ES--The Business Process Management/Enterprise Solution-- is used to create a tracking and control system for office workflow.

*Continuum Property and Casualty Products:*

COGEN, acquired with Computations, is an on-line, real-time, relational database system for property and casualty insurance companies that provides various administrative and marketing capabilities.

- Functions supported include client handling, underwriting, claims management, reinsurance, payables and receivables management, regulatory reporting and various productivity tools.
- COGEN is available for IBM and compatible mainframes operating under MVS/XA and MVS/ESA.
- Continuum is enhancing COGEN to comply with ES/C principles and to add specific functionality for the U.S. market.
- As of March 31, 1993, 22 customers had installed all or part of COGEN, including nine customers in Australia, nine customers in Europe, and four customers in the U.S. On March 31, 1993, there were 31 licenses outstanding to the COGEN system, including four licenses granted to U.S. customers.

COLOSSUS, developed by Computations and a major Australian insurance company, is an expert system that assists claims adjusters with the evaluation and settlement of bodily injury claims.

- The system runs on IBM ES/3090 systems and MS-DOS-compatible PCs.
- Two U.S. insurance companies purchased licenses to use COLOSSUS during March 1992.

#### *Processing, Systems Operations, Professional and Support Services:*

Continuum mainframe software is available to clients as a remote computing service from the data center in Austin (TX) and Sydney (Australia). The company is also combining its software with a range of other services, including systems integration and systems operations.

- KeySource 2000™ is Continuum's outsourcing package, which includes implementation, development, and conversion services around standardized software products.
- Under an \$11 million, three-year systems integration contract with Fidelity Union Life Insurance Company and North American Life and Casualty Company (two subsidiaries of Allianz AG of Germany), Continuum is consolidating policies administered by the two companies onto a single integrated policy administration system. The two insurance companies are merging into a new company called Allianz Life Insurance Company of North America.
- Other clients include Financial Holding Corporation (four-year, \$10.6 million systems operations contract), Royal Financial Services, Harcourt General Insurance Companies (seven-year, \$50 million

systems operations contract), Rural Mutual Insurance Company (seven-year, \$40 million systems operations contract) and Pearl Assurance of the U.K.

Support services, which provide the major revenue source to Continuum, include consulting, installation, maintenance, education, custom software modifications and shared-cost enhancements.

As of March 31, 1993, Continuum was providing maintenance services to 19 CCA customers, nine COGEN customers, 47 LIFE/70 customers, 31 LIFE-COMM III customers, 11 CLOAS customers, and three COLOSSUS customers.

*Computer Hardware:*

Continuum has one IBM 3090-500J installed in Austin for research and development, customer support and processing services. The Sydney office has two IBM 3084s installed.

*Vantage Computer Systems:*

Vantage Computer Systems offers remote processing and full third-party administrative services using Vantage software for life and annuity product support and total outsourcing of all client data processing functions.

Vantage's life insurance software, VANTAGE ONE™, is a real-time system supporting new business, issue and automated underwriting, product administration, agency and commission support, and payout administration.

VANTAGE P&C is a fully operational, SAA-compliant, DB/2-based property and casualty insurance administration system.

Approximately 200 customers have purchased Vantage products.

*Paxus Corporation Limited:*

As a result of the acquisition of Paxus, expanded product offerings include midrange (IBM AS/400) products for insurance and administration and new products for the reinsurance market. Approximately 220 customers have purchased Paxus products.

## Alliances

Under the Advanced Development Program (ADP), Continuum and three customers--Principal Financial Group, Sun Alliance Insurance Group, and Norwich Union Life Insurance Society--agreed to fund a series of development projects related to architectural and technical enhancements to CCA to take advantage of the IBM SAA platform and extend CCA into workstation architecture, image processing and knowledge-based solutions.

- Continuum has recognized approximately \$58 million in revenue from ADP since its inception in 1989.
- During fiscal 1993, revenues from the ADP agreement represented \$15 million or 12% of total revenue, compared to \$22.2 million or 17% of total revenue in fiscal 1992, and \$18.8 million or 17% of total revenue in fiscal 1991.

In 1992, Continuum and IBM strengthened their relationship with two new agreements in the U.S. to provide systems integration and outsourcing services to the insurance industry.

- Continuum and IBM ISSC have a joint agreement whereby Continuum will provide its applications software to ISSC customers and ISSC will supply data center and network resources and operations along with services and support.
- In Europe, Continuum established new joint marketing agreements with IBM in Portugal and Switzerland.
- The company also has an existing agreement with IBM in the U.K.

## Clients

U.S. clients using Continuum software include Principal Financial Group, Sun Alliance Insurance Group, Norwich Union Life Insurance Society, Rural Insurance Companies, USF&G, Iowa Farm Bureau, Guarantee Mutual, Legal and General Corporation (Banner Life), Farmer's New World and American States Insurance Company.

International clients using Continuum software include Allianz A.G. (Germany), Garantie Mutuelle Des Fonctionnaires (France), Groupama (France), UAP Nederland B.V., Eagle Star Insurance Company (U.K.), National Farmers Union Mutual (U.K.), Avon Insurance (U.K.), The Sampo Group (Finland), Standard Life (Scotland), Independent Order of Foresters (Canada), Grupo Nacional Provincial (Mexico), Asahi Mutual Life Insurance Company (Japan), SUNCORP Insurance & Finance (Australia) and GIO (Australia).

**Competitors**

Major competitors include Electronic Data Systems and Policy Management Systems.



## COMPANY PROFILE

---

### **THE CONTINUUM COMPANY, INC.**

9500 Arboretum Boulevard  
Austin, TX 78759-6399  
(512) 345-5700

Ronald C. Carroll, Chairman and CEO  
W. Michael Long, President and COO  
Public Corporation, NYSE  
Total Employees: 1,080 (3/92)  
Total Revenue, Fiscal Year End  
3/31/92: \$127,404,000

---

### **The Company**

The Continuum Company, Inc. (Continuum), incorporated in 1968, provides applications software products, associated professional services, and remote computing services to the insurance industry. The company's principal product, the CLIENT/CONTRACT ADMINISTRATION™ (CCA) system, supports the administration and marketing of individual life, health, and annuity insurance policies.

Continuum's October 1990 acquisition of Computations Holdings Limited of Australia extended Continuum's market to include property and casualty insurance companies. It also provided Continuum with new offices in Australia, Denmark, and Norway, and substantially increased its presence in Europe.

- Computations, which now operates as Continuum Australia, provides software products and professional services to both life and property and casualty insurance companies. Primary products include COGENT™, CLOAS<sup>®</sup>, and COLOSSUS™.

In April 1991, Continuum extended its commitment to an open, integrated systems environment by announcing Enterprise Solutions by Continuum™ (ES/C), a new strategy for delivering software in smaller components that can be readily integrated with a customer's existing and future systems. The ES/C strategy includes developing standardized interfaces to the various modules of CCA and to Continuum's other products to permit the integration of Continuum products with each other and with in-house and third-party systems.

In May 1992, Continuum announced a public offering of 2.5 million shares of common stock.

## Financials

Continuum's fiscal 1992 revenue reached \$127.4 million, a 13% increase over fiscal 1991 revenue of \$112.7 million. Net income declined 3%, from \$8.9 million in fiscal 1991 to \$8.6 million in fiscal 1992. A five-year financial summary follows:

**THE CONTINUUM COMPANY, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	3/92	3/91	3/90	3/89	3/88
Revenue	\$127.4	\$112.7	\$80.1	\$66.1	\$60.4
· Percent increase from previous year	13%	41%	21%	10%	4%
Income before taxes	\$14.9	\$15.4	\$8.5	\$1.9	\$4.4
· Percent increase (decrease) from previous year	(4%)	81%	349%	(53%)	(34%)
Net income	\$8.6	\$8.9	\$5.5	\$1.2	\$2.5
· Percent increase (decrease) from previous year	(3%)	62%	362%	(52%)	(29%)
Earnings per share	\$0.81	\$0.93	\$0.63	\$0.14	\$0.29
· Percent increase (decrease) from previous year	(13%)	48%	350%	(52%)	(22%)

Continuum management attributes fiscal 1992 results to the following:

- License revenues reached \$8.0 million, an 11% increase over \$7.2 million for fiscal 1991. Approximately 85% of fiscal 1992 license revenues were attributed to property and casualty software systems, compared with 55% in fiscal 1991. License revenues from non-U.S. customers accounted for 67% of license revenues in fiscal 1992, compared to 56% in fiscal 1991.
- Service revenues reached \$117.9 million, a 12% increase over \$105.5 million in fiscal 1991, due primarily to the inclusion of Continuum Australia's service revenues for the entire fiscal 1992 year.
- The increase in service revenue from Continuum Australia offset an approximate 19% decline in CCA service revenues for fiscal 1992, from \$61.0 million to \$49.4 million. The decrease in CCA service revenues resulted from a reduction in CCA implementation activity and a reduction in CCA

maintenance contracts from 36 at March 31, 1991 to 27 at March 31, 1992.

- The decrease in CCA maintenance and implementation activity was attributed to the introduction of CCA2, the financial condition of the life insurance industry, and market changes in the insurance industry.
- Product research and development expenditures, net of capitalized costs, were approximately \$40.0 million (31% of revenue) in fiscal 1992, \$39.8 million (35% of revenue) in fiscal 1991, and \$22.5 million (28% of revenue) in fiscal 1990.
- Marketing and administration expenses increased 31%, from \$20.9 million in fiscal 1991 to \$27.5 million in fiscal 1992 due to increased overhead expenses associated with the acquisition of Computations.

Revenue for the three months ending June 30, 1992 was \$29.8 million, compared to \$29.4 million for the same period in 1991. Net income rose 50%, from \$1.1 million to \$1.6 million. Improved earnings were attributed to an increase in license revenue.

- Continuum reported license revenue of \$3.5 million for the quarter, compared to \$1.1 million for the same period a year ago.
- The company experienced significant new CCA2™ and COGEN™ product licenses sales in Europe and North America and launched the CCA2 implementation at Asahi Mutual Life Insurance Company in Japan.

## Employees

As of March 31, 1992, Continuum had 1,080 full-time employees (624 in the U.S., 239 in Europe, and 217 in Australia), segmented as follows:

Marketing, sales, and general administration	153
Data processing operations	71
Systems development, custom systems modification, systems installation, and consulting	856
	1,080

## Competitors

Major competitors include Electronic Data Systems, Cybertek Computer Products, and Policy Management Systems.

**Key Products and Services**

INPUT estimates that over 85% of Continuum's fiscal 1992 revenue was derived from its various professional services, including maintenance fees and enhancements, and 6% was derived from software licenses. The remainder of revenue was derived from processing services and interest income.

A three-year summary of source of revenue, as provided by Continuum, follows:

**THE CONTINUUM COMPANY, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	3/92		3/91		3/90	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Maintenance/ enhancement service	\$117.9	93%	\$105.5	94%	\$41.4	52%
Professional and processing services	(a)	(a)	(a)	(a)	34.2	43%
Software licenses	8.0	6%	7.2	6%	4.4	5%
Interest income	1.5	1%	--	--	--	--
<b>TOTAL</b>	<b>\$127.4</b>	<b>100%</b>	<b>\$112.7</b>	<b>100%</b>	<b>\$80.0</b>	<b>100%</b>

(a) Included with maintenance/enhancement services.

Continuum's fee-based services business, which currently provides over 90% of the company's total revenue, is built around proprietary applications software products and emphasizes long-term relationships with customers. The implementation of the software generally requires significant customization to meet the needs of individual customers. Continuum also provides significant enhancement and maintenance services to its software clients.

*Life Insurance Products:*

LIFE/70, LIFE-COMM III, and CLOAS support batch and on-line processing and provide administrative capabilities to life insurance companies, including billing and collections, agency administration, policy generation and administration, and regulatory reporting. These products have been extensively enhanced and extended since their introduction and currently have product support programs funded by over 100 customers.

- LIFE/70, introduced by Continuum in 1971, and LIFE-COMM III, a similar system, was acquired by Continuum in late 1984. These products have been marketed primarily to U.S. life insurance companies.
- CLOAS was developed in Australia and introduced in the late 1970s by Computations. Most users are located in Australia and Europe.

The CLIENT/CONTRACT ADMINISTRATION (CCA) System is a large, complex, interactive and on-line administrative and marketing system for life insurance companies first released in 1987.

- The CCA System is available for IBM and compatible mainframes running under MVS/XA. Modules include the CLIENT MANAGEMENT System, DISTRIBUTION MANAGEMENT System, the PRODUCT MANAGEMENT System, and the CONTRACT MANAGEMENT System.
- As of March 31, 1992, 13 customers had completed product installation of the CLIENT MANAGEMENT module, 11 customers were using the DISTRIBUTION MANAGEMENT module, and three customers were using all four modules of CCA.

The Advanced Development Program (ADP), introduced in 1989, is a cooperative venture between Continuum and three of its major customers to substantially fund advanced CCA architectural enhancements during the next five years. Customers participating in ADP include Principal Financial Group, Sun Alliance Insurance Group, and Norwich Union Life Insurance Society.

Development projects funded by ADP have resulted in life insurance ES/C software products collectively known as CCA2 that are scheduled for availability during 1992 and 1993. The products can be linked with other insurance company software to provide an integrated, enterprise-wide system.

- CMS/ES--The Client Management System/Enterprise Solution--is a client management system that allows an insurance company to consolidate information about all of its customers in a single data base.
- DMS/ES--The Distribution Management System/Enterprise Solution--performs major functions required for an insurance company to support its distribution systems, including the payment of commissions, new business production reporting, measurement of sales performance, and regulatory compliance.

- CAS/ES--The Contract Administration System/Enterprise Solution--performs the major administrative functions associated with life insurance policies, including new business processing, regulatory reporting, and contract administration for a range of traditional and non-traditional insurance policies.
- NBW/ES--The New Business Workstation/Enterprise Solution--implements the new business function of CAS/ES on a workstation server. New business refers to the process of issuing new insurance policies.
- CHP/ES--The Continuum Host Platform/Enterprise Solution is the host platform for CMS/ES, DMS/ES, and CAS/ES.
- CDP/ES--The Continuum Development Platform/Enterprise Solution--is the development platform for other ES/C products. It provides a set of software development and management tools, and can be used by customers for developing and enhancing systems.
- Continuum is also developing two non-industry specific ES/C products as follows:
  - CWP/ES--The Continuum Workstation Platform/Enterprise Solution--is a technical platform that enables customers to adopt cooperative processing. CWP/ES resides primarily on the server and passes data and programs between the host and the client.
  - BPM/ES--The Business Process Management/Enterprise Solution-- is used to create a tracking and control system for office workflow.

*Property and Casualty Products:*

COGEN, acquired with Computations, is an on-line, real-time, relational data base system for property and casualty insurance companies that provides various administrative and marketing capabilities.

- Functions supported include client handling, underwriting, claims management, reinsurance, payables and receivables management, regulatory reporting, and various productivity tools.
- COGEN is available for IBM and compatible mainframes operating under MVS/XA and MVS/ESA.

- Continuum is enhancing COGEN to comply with ES/C principles and to add specific functionality for the U.S. market.
- As of March 31, 1992, 18 customers had installed all or part of COGEN, including eight customers in Australia, seven customers in Europe, and three customers in the U.S. On March 31, 1992, there were 27 licenses outstanding to the COGEN system, including four licenses granted to U.S. customers.

COLOSSUS, developed by Computations and a major Australian insurance company, is an expert system that assists claims adjusters with the evaluation and settlement of bodily injury claims.

- The system runs on IBM ES/3090 systems and MS-DOS-compatible PCs.
- Two U.S. insurance companies purchased licenses to use COLOSSUS during March 1992.

*Processing, Professional, and Support Services:*

Continuum mainframe software is available to clients as a remote computing service from the data center in Austin. The company currently supports approximately seven clients on a remote computing or systems operations basis. Clients include Financial Holding Corporation and Royal Financial Services.

Support services, which provide the major revenue source to Continuum, include consulting, installation, maintenance, education, custom software modifications, and shared-cost enhancements.

- As of March 31, 1992, Continuum was providing maintenance services to 27 CCA customers, 10 COGEN customers, 51 LIFE/70 customers, 32 LIFE-COMM III customers, 12 CLOAS customers, and two COLOSSUS customers.

**Industry Markets**

One hundred percent of Continuum's revenue is derived from the insurance industry. Approximately 65% of revenue is derived from life insurance companies and 35% from property and casualty insurance companies.

Continuum's marketing efforts are directed primarily at large and medium-sized life and property and casualty insurance companies in North America, the U.K., Western Europe, Japan, and Australia.

During fiscal 1992, revenues from the ADP agreement with Principal Financial Group, Sun Alliance Insurance Group, and Norwich Union Life represented \$22.2 million or 17% of total revenue, compared to \$18.8 million or 17% of total revenue in fiscal 1991.

During fiscal 1990, Lincoln National Life Insurance Company and affiliates contributed \$11 million (14%) to Continuum's revenue and Sun Life Assurance Society contributed \$8.9 million (11%).

### Geographic Markets

Approximately 38% of Continuum's fiscal 1992 revenue was derived from U.S. customers, 42% from Europe, 18% from the Pacific (Australia and Japan), and 2% from other international sources.

A three-year geographical source of revenue summary follows:

**THE CONTINUUM COMPANY, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
(\$ millions)

	FISCAL YEAR					
	3/92		3/91		3/90	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$49.0	38%	\$56.0	50%	\$49.5	62%
Europe (a)	53.8	42%	43.6	39%	28.0	35%
Pacific	22.4	18%	10.5	9%	--	--
Other	2.2	2%	2.6	2%	2.6	3%
<b>TOTAL</b>	<b>\$127.4</b>	<b>100%</b>	<b>\$112.7</b>	<b>100%</b>	<b>\$80.1</b>	<b>100%</b>

(a) Includes export revenue from the U.S. of approximately \$18.8 million in fiscal 1992, \$20.5 million in fiscal 1991, and \$17.7 million in fiscal 1990.

In addition to the headquarters office in Austin, Continuum has international offices in Paris (France), Frankfurt (Germany), Camberley (England), Oslo (Norway), Copenhagen (Denmark), Monfoort (Netherlands), North Sydney (Australia), and Tokyo (Japan).

### Computer Hardware

Continuum has one IBM 3090-500J installed in Austin for research and development, customer support, and processing services. The Sydney office has two IBM 3084s installed.

## COMPANY PROFILE

---

### **THE CONTINUUM COMPANY, INC.**

9500 Arboretum Boulevard  
Austin, TX 78759-6399  
(512) 345-5700

Ronald C. Carroll, Chairman and CEO  
W. Michael Long, President and COO  
Public Corporation, NYSE  
Total Employees: 1,150 (3/91)  
Total Revenue, Fiscal Year End  
3/31/91: \$112,664,000

---

### **The Company**

The Continuum Company, Inc. (Continuum), incorporated in 1968, provides application software products, remote computing services, and professional services to the insurance industry. The company's principal product, the CLIENT/CONTRACT ADMINISTRATION™ (CCA) system, supports the administration and marketing of individual life, health, and annuity insurance policies.

In October 1990, Continuum acquired Computations Holdings Limited of Australia for approximately 1.75 million shares of Continuum common stock (valued at \$10.8 million). The acquisition was accounted for as a purchase.

- Computations provides application software products and professional services to both life and property and casualty insurance companies. Primary products include COGEN™, CLOAS®, and COLOSSUS™.
- The acquisition extended Continuum's market to include property and casualty insurance companies. It also provided Continuum with new offices in Australia, Denmark, and Norway, and substantially increased its presence in Europe.
- Computations had approximately 300 employees at the time of the acquisition and annual revenue of about \$32.5 million. Its operations have been merged into Continuum.

In April 1991, Continuum extended its commitment to an open, integrated systems environment by announcing Enterprise Solutions by Continuum™ (ES/C). The ES/C strategy includes developing standardized interfaces to the various modules of CCA and to Continuum's other products to permit the integration of Continuum products with each other and with in-house and third-party systems.

Continuum's fiscal 1991 revenue reached \$112.7 million, a 41% increase over fiscal 1990 revenue of \$80.1 million. Net income rose 62%, from \$5.5 million in fiscal 1990, to \$8.9 million in fiscal 1991. A five-year financial summary follows:

**THE CONTINUUM COMPANY, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR					
	3/91	3/90	3/89	3/88	3/87	CAGR
Revenue	\$112.7	\$80.1	\$66.1	\$60.4	\$58.2	18%
• Percent increase from previous year	41%	21%	10%	4%	10%	
Income before taxes	\$15.4	\$8.5	\$1.9	\$4.4	\$6.2	26%
• Percent increase (decrease) from previous year	81%	349%	(53%)	(34%)	272%	
• Gross margin	14%	11%	3%	7%	11%	
Net income	\$8.9	\$5.5	\$1.2	\$2.5	\$3.2	29%
• Percent increase (decrease) from previous year	62%	362%	(52%)	(29%)	277%	
• Net margin	8%	7%	2%	4%	6%	
Earnings per share (a)	\$0.93	\$0.63	\$0.14	\$0.29	\$0.37	26%
• Percent increase (decrease) from previous year	48%	350%	(52%)	(22%)	76%	

(a) Restated to reflect a 100% stock dividend paid on July 20, 1990.

Continuum management attributes fiscal 1991 results to the following:

- License revenues reached \$7.2 million, a 63% increase over \$4.4 million for fiscal 1990. License revenues for fiscal 1991 include \$4 million in revenue from COGEN, a product acquired with Computations in October 1990.
- Service revenues reached \$105.5 million, a 39% increase over the previous year.
- Service revenue from CCA was \$61 million, an 11% increase over the previous year. The increase was due to the CCA Advanced Development Program (ADP), which funds a series of architectural enhancements to CCA. Revenues from the ADP totaled \$19 million during fiscal 1991, compared to \$2

million for fiscal 1990. CCA service revenue, other than from the ADP, decreased from \$53 million to \$42 million primarily as a result of reduced implementation activities.

- Service revenue related to Computations' products was \$20 million, with approximately 51% coming from Australia, 44% from Europe, and 5% from the U.S. COGEN services contributed approximately \$14.8 million to Continuum's fiscal 1991 revenue.
- Service revenue from LIFE-COMM III and LIFE/70 increased approximately 24% to \$25 million, primarily due to increased data processing revenue.

Product research and development expenditures, net of capitalized costs, were approximately \$39.8 million (35% of revenue) in fiscal 1991, \$22.5 million (28% of revenue) in fiscal 1990, \$19.3 million (29% of revenue) in fiscal 1989, and \$17.5 million (29% of revenue) in fiscal 1988.

As of March 31, 1991, Continuum had 1,150 full-time employees (717 in the U.S., 216 in Europe, and 217 in Australia), segmented as follows:

Marketing, sales, and general administrative	143
Data processing operations	73
Systems development, custom systems modification, systems installation, and consulting	934
	1,150

Major competitors include Electronic Data Systems, Cybertek Computer Products, and Policy Management Systems.

#### **Key Products and Services**

INPUT estimates over 85% of Continuum's fiscal 1991 revenue was derived from its various professional services, including maintenance fees and enhancements, and 6% was derived from software licenses. The remainder of revenue was derived from processing services.

A three-year summary of source of revenue, as provided by Continuum, follows:

**THE CONTINUUM COMPANY, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
 (\$ millions)

ITEM	FISCAL YEAR					
	3/91		3/90		3/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Maintenance/ enhancement service	\$105.5	94%	\$41.4	52%	\$30.6	46%
Professional and processing services	(a)	(a)	34.2	43%	28.3	43%
Software licenses	7.2	6%	4.4	5%	7.2	11%
<b>TOTAL</b>	<b>\$112.7</b>	<b>100%</b>	<b>\$80.0</b>	<b>100%</b>	<b>\$66.1</b>	<b>100%</b>

(a) Included with maintenance/enhancement services.

Continuum's software products often require significant customization to meet the needs of individual customers. The products are relatively long-lived, complex, and require ongoing maintenance and enhancement due to competitive pressures in the insurance industry and technological and regulatory changes. Continuum's primary revenue source comes from providing these installation, customization, enhancement, and maintenance services to its software clients.

*Life Insurance Products:*

In 1981, Continuum began developing the CLIENT/CONTRACT ADMINISTRATION (CCA) System as a next-generation administrative and marketing software system for life insurance companies.

- Long-term license agreements were signed with 34 life insurance companies in 1982, and an additional 77 customers had licensed the system as of March 31, 1991.
- Committees of customers have monitored the development of the system since its inception and suggested features and revisions as the system progressed through the development phase.
- In June 1987, Continuum delivered Version 1.0 of the CCA system. Several subsequent releases have added improvements to the system, and additional releases are anticipated.

- The CCA System is available for IBM and compatible mainframes running under MVS/XA. Modules include the following:
  - The CLIENT MANAGEMENT System is a financial services vehicle that captures and maintains client information for marketing, actuarial, and other studies. It is a generic billing, collection, asset management, and communications tool for integrating the products and services an insurance company offers.
  - The DISTRIBUTION MANAGEMENT System manages the payment of commissions, new business production reporting, measurement of sales performance, and regulatory compliance.
  - The PRODUCT MANAGEMENT System provides actuaries with an interactive product development and pricing tool.
  - The CONTRACT MANAGEMENT System performs the major administrative functions for life insurance companies, including new business processing, regulatory reporting, and contract administration for a range of traditional and nontraditional insurance products.
- As of March 31, 1991, 11 customers had completed product installation of the CLIENT MANAGEMENT AND DISTRIBUTION MANAGEMENT modules of CCA, and three customers were using all four CCA modules in production.
- Most existing CCA licensees purchased their CCA licenses before CCA was ready for installation at license fees substantially below current prices. Many have no immediate plans to install CCA due to business difficulties, mergers with other insurance companies, the belief that CCA is now inappropriate for their needs, or not wishing to incur the expense of installing and maintaining CCA. Many customers in this category have elected to continue using Continuum's LIFE/70 or LIFE-COMM III Systems.
- The Advanced Development Program (ADP), introduced in 1989, is a cooperative venture between Continuum and three of its major customers to substantially fund advanced CCA architectural enhancements during the next five years.
  - Customers participating in ADP include Principal Financial Group, Sun Alliance Insurance Group, and Norwich Union Life Insurance Society.

- Projects totalling \$23 million have been approved. Approximately \$19 million worth of services was performed on such projects in fiscal 1991, and \$2 million in fiscal 1990.

Since 1971, Continuum has marketed its LIFE/70 system to the life insurance industry. In late 1984, Continuum acquired LIFE-COMM III, a similar software product that had been developed by Informatics in the early 1970s.

- Both products are designed for IBM and compatible mainframes and use batch and on-line processing to provide administrative functions, such as billing and collections, agency administration, policy generation, and regulatory reporting.
- Continuum no longer actively markets these products, but continues to provide enhancement/subscription support services to approximately 90 companies in the life, health, and annuity insurance industry.

CLOAS (Computations Life Office Administration System), acquired with Computations in 1990, is an on-line, IBM mainframe-based system that integrates client, accounting, and actuarial functions for traditional and nontraditional insurance.

#### *Property and Casualty Products:*

COGEN, acquired with Computations, is an on-line, real-time, relational data base system for property and casualty insurance companies that provides various administrative and marketing capabilities.

- Functions supported include client handling, underwriting, claims management, reinsurance, payables and receivables management, regulatory reporting, and various productivity tools.
- COGEN is available for IBM and compatible mainframes operating under MVS/XA and MVS/ESA.
- Although Continuum actively markets COGEN in the U.S., the company believes that most COGEN licenses sold during the next several years will be in Western Europe. Due to complex insurance regulations that vary from state to state, many property and casualty insurance companies in the U.S. require software with functionality not needed by insurance companies in Australia and Europe. Continuum is currently enhancing COGEN to improve its fit within the U.S. market.

- As of March 31, 1991, 13 customers had installed all or part of COGEN, including eight customers in Australia and five customers in Europe. At March 31, 1991, there were 23 licenses outstanding to the COGEN system, including two licenses granted to U.S. customers.

COLOSSUS, developed by Computations and a major Australian insurance company, is an expert system that assists claims adjusters with the evaluation and settlement of bodily injury claims.

- By posing a series of detailed questions, COLOSSUS guides adjusters through the assessment process and helps determine the recommended settlement amount.
- The system runs on IBM ES/3090 systems and MS-DOS-compatible PCs.
- To date, COLOSSUS is not a significant revenue source for the company.

*Processing, Professional, and Support Services:*

Continuum mainframe software is available to clients as a remote computing service from the data center in Austin. The company currently supports approximately seven clients on a remote computing or systems operations basis. Clients include Financial Holding Corporation and Royal Financial Services.

Support services provided by Continuum include consulting, installation, maintenance, education, custom software modifications, and shared-cost enhancements.

- As of March 31, 1991, Continuum was providing maintenance services to 36 CCA customers, 18 COGEN customers, 53 LIFE/70 customers, 35 LIFE-COMM III customers, and 15 CLOAS customers.

**Industry Markets**

One hundred percent of Continuum's revenue is derived from the insurance industry. Approximately 75% of revenue is derived from life insurance companies and 25% from property and casualty insurance companies.

Continuum's marketing efforts are directed primarily at large and medium-sized life and property and casualty insurance companies in North America, the U.K., Western Europe, Japan, and Australia.

During fiscal 1991, revenues from the ADP agreement with Principal Financial Group, Sun Alliance Insurance Group, and Norwich Union Life represented \$18.8 million or 17% of total revenue.

During fiscal 1990, Lincoln National Life Insurance Company and affiliates contributed \$11 million (14%) to Continuum's revenue and Sun Life Assurance Society contributed \$8.9 million (11%).

### Geographic Markets

Approximately 50% of Continuum's fiscal 1991 revenue was derived from U.S. customers, 39% from Europe, 9% from the Pacific (Australia and Japan), and 2% from other international sources.

A three-year geographical source of revenue summary follows:

**THE CONTINUUM COMPANY, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
(\$ millions)

ITEM	FISCAL YEAR					
	3/91		3/90		3/89	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$56.0	50%	\$49.5	62%	\$44.8	68%
Europe (a)	43.6	39%	28.0	35%	16.5	25%
Pacific	10.5	9%	--	--	--	--
Other	2.6	2%	2.6	3%	4.8	7%
<b>TOTAL</b>	<b>\$112.7</b>	<b>100%</b>	<b>\$80.1</b>	<b>100%</b>	<b>\$66.1</b>	<b>100%</b>

(a) Includes export revenue from the U.S. of approximately \$20.5 million in fiscal 1991, \$17.7 million in fiscal 1990, and \$7.6 million in fiscal 1989.

U.S. customers accounted for approximately 50% of Continuum's \$105.5 million in service revenue for fiscal 1991, compared to 62% of fiscal 1990 service revenue. Year-to-year growth of service revenue from U.S. customers was 13%.

- European customers accounted for 38% of fiscal 1991 service revenue. Year-to-year growth of service revenue from European customers was 51%.
- The remainder of fiscal 1991 service revenue was derived primarily from Australia and Japan.

In addition to the headquarters office in Austin, Continuum has international offices in Paris (France), Frankfurt (Germany), Camberley (England), Oslo (Norway), Copenhagen (Denmark), Monfoort (Netherlands), North Sydney (Australia), and Tokyo (Japan).

**Computer  
Hardware**

Continuum has one IBM 3090-500J installed in Austin for research and development, customer support, and processing services. The Sydney office has two IBM 3084s installed.



## COMPANY PROFILE

---

### **THE CONTINUUM COMPANY, INC.**

9500 Arboretum Boulevard  
Austin, TX 78759-6399  
(512) 345-5700

Ronald C. Carroll, Chairman and CEO  
Michael Long, President and COO  
Public Corporation, AMEX  
Total Employees: 807 (3/90)  
Total Revenue, Fiscal Year End  
3/31/90: \$80,052,000

---

### **The Company**

The Continuum Company, Inc. (TCC), incorporated in 1968, provides application software products, remote computing services, and professional services to the insurance industry. The company's principal product, the CLIENT/CONTRACT ADMINISTRATION (CCA) system, supports the administration and marketing of individual life, health, and annuity insurance policies.

TCC's fiscal 1990 revenue reached \$80.1 million, a 21% increase over fiscal 1989 revenue of \$66.1 million. Net income rose 362%, from \$1.2 million in fiscal 1989 to \$5.5 million in fiscal 1990. A five-year financial summary follows:

**THE CONTINUUM COMPANY, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR					CAGR
	3/90	3/89	3/88	3/87	3/86	
Revenue	\$80.1	\$66.1	\$60.4	\$58.2	\$52.7	11%
• Percent increase from previous year	21%	10%	4%	10%	9%	
Income (loss) before taxes	\$8.5	\$1.9	\$4.4	\$6.2	\$(3.6)	N/A
• Percent increase (decrease) from previous year	349%	(53%)	(34%)	272%	(137%)	
• Gross margin	11%	3%	7%	11%	--	
Net income (loss)	\$5.5	\$1.2	\$2.5	\$3.2	\$(1.8)	N/A
• Percent increase (decrease) from previous year	362%	(52%)	(29%)	277%	(132%)	
• Net margin	7%	2%	4%	6%	--	
Earnings (loss) per share	\$1.27	\$0.28	\$0.57	\$0.75	\$(0.42)	N/A
• Percent increase (decrease) from previous year	354%	(51%)	(24%)	279%	(132%)	

TCC management attributes fiscal 1990 results to the following:

- Revenue increases were the result of a 28% increase in service revenue for maintenance and enhancements, as well as professional and processing services. CCA service revenues increased from \$33 million in fiscal 1989 to \$55 million in fiscal 1990.
- License revenue declined from \$7.2 million in fiscal 1989 to \$4.4 million in fiscal 1990.
- For fiscal 1990, operating expenses other than marketing and administration expenses increased 15%. With service revenue increasing 28%, operating margins increased over \$10 million (60% of the revenue increase).
- Marketing and administration expenses increased only 3% during fiscal 1990. Legal expenses (\$3.1 million) were down slightly compared to fiscal 1989, but were drastically reduced

in the last half of the year due to partial settlements and a change to a contingent fee arrangement with litigation counsel.

For fiscal 1989, declines in net income were the result of a \$4.1 million (29%) increase in administrative, marketing, and other expenses.

- Legal costs, including litigation initiated by TCC related to misuse of its LIFE-COMM III product, were approximately \$3.2 million. Costs associated with relocation of TCC facilities were approximately \$1.5 million. These expenses totaled \$4.7 million in fiscal 1989, compared to \$3.4 million in fiscal 1988.
- Expenses also increased about \$2.2 million as a result of expanding marketing and selling efforts, primarily outside the U.S., including initiatives in Japan, the U.K., and Europe.

Product research and development expenditures, net of capitalized costs, were approximately \$22.5 million (28% of revenue) in fiscal 1990, \$19.3 million (29% of revenue) in fiscal 1989, and \$17.5 million (29% of revenue) in fiscal 1988.

As of March 31, 1990, TCC had 807 full-time employees, segmented as follows:

Marketing, sales, and general administrative	96
Data processing operations	47
Systems development, custom systems modification, systems installation, and consulting	<u>664</u>
	807

Major competitors include Electronic Data Systems, Cybertek Computer Products, and CAPSCO-PALLM.

### **Key Products and Services**

Approximately 5% of TCC's fiscal 1990 revenue was derived from software licenses, 52% from maintenance fees and enhancements, and 43% from professional and processing services.

A three-year summary of source of revenue, as provided by TCC, follows:

**THE CONTINUUM COMPANY, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

	FISCAL YEAR					
	3/90		3/89		3/88	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$4.4	5%	\$7.2	11%	\$10.8	18%
Maintenance/enhancement	41.4	52%	30.6	46%	22.5	37%
Professional and processing services	34.2	43%	28.3	43%	27.1	45%
<b>TOTAL</b>	<b>\$80.0</b>	<b>100%</b>	<b>\$66.1</b>	<b>100%</b>	<b>\$60.4</b>	<b>100%</b>

In 1981, TCC began developing the CLIENT/CONTRACT ADMINISTRATION (CCA) System as a next-generation administrative and marketing software system for life insurance companies.

- Long-term license agreements were signed with 34 life insurance companies in 1982. A committee of customers has monitored the features and revisions as the system progressed through the development phase.
- In June 1987, TCC delivered Version 1.0 of the CCA system. Version 1.1 was delivered in February 1988; Version 1.2 in September 1988, and Version 1.3 in May 1989. Additional versions are scheduled for delivery in subsequent periods.
- The CCA System is currently TCC's main source of software license revenue. On March 31, 1990, 110 licenses covering various modules of the CCA System were outstanding to 109 separate life insurance companies.
- The CCA System is available for IBM and compatible mainframes running under MVS/XA. Modules include the following:
  - The CLIENT MANAGEMENT System is a financial services vehicle that captures and maintains client information for marketing, actuarial, and other studies. It is a generic billing, collection, asset management, and

communications tool for integrating the products and services an insurance company offers.

- The DISTRIBUTION MANAGEMENT System manages seller compensation and performance reporting requirements. The system supports multiple distribution methods, including career agents, general agencies, brokers, and dealers.
- The PRODUCT MANAGEMENT System provides actuaries with an interactive product development and pricing tool.
- The CONTRACT MANAGEMENT System handles contracts throughout their life cycle in the company, including new application processing, underwriting, issue, policy service, claims, reinsurance ceded administration, and periodic payments. Values from all of a client's existing contracts can be quoted with a single request and the system can then process at the individual contract or benefit level.

In November 1989, TCC launched its Advanced Development Program (ADP), a cooperative venture between TCC and three of its major customers to substantially fund advanced CCA architectural enhancements during the next five years.

- Customers participating in ADP include Principal Financial Group, Sun Alliance Insurance Group, and Norwich Union Life Insurance Society.
- Funding of approximately \$15 million has been approved for an initial set of development projects targeted for release during calendar 1990 and 1991.

Support services provided by TCC include maintenance, consulting, education, custom software modifications, processing, and shared-cost enhancements.

- At the end of fiscal 1990, 140 customers had subscribed to TCC's product support services, compared to 55 customers at the end of fiscal 1989.
- During fiscal 1990, CCA service revenue was approximately \$55 million compared to \$33 million for fiscal 1989 and \$17 million for fiscal 1988.

Since 1971, TCC has marketed its LIFE/70 system to the life insurance industry. In late 1984, TCC acquired LIFE-COMM III,

a similar software product that had been developed by Informatics in the early 1970s.

- Both products are designed for IBM and compatible mainframes and use batch and on-line processing to provide administrative functions, such as billing and collections, agency administration, policy generation, and regulatory reporting.
- TCC no longer actively markets these products, but continues to provide enhancement/subscription support services to approximately 90 companies in the life, health, and annuity insurance industry.
- During 1989, TCC assumed full responsibility for managing the data processing activities of Financial Holding Corporation, a customer of TCC's LIFE-COMM and LIFE/70 products.

TCC mainframe software is available to clients as a remote computing service from the data center in Austin. The company currently supports approximately 10 clients on a remote computing or facilities management basis.

## **Industry Markets**

One hundred percent of TCC's revenue is derived from the life, health, and annuity insurance industries.

During fiscal 1990, Lincoln National Life Insurance Company contributed \$11 million (14%) to TCC's revenue and Sun Life Assurance Society contributed \$8.9 million (11%).

The Equitable Life Assurance Society of the U.S. and its affiliates contributed approximately \$8.4 million (13% of revenue) in fiscal 1989, \$7.1 million (12% of revenue) in fiscal 1988, and \$12.5 million (21% of revenue) in fiscal 1987 to TCC's total revenue.

## **Geographic Markets**

Approximately 62% of TCC's fiscal 1990 revenue was derived from U.S. customers, 35% from Europe, and 3% from other international sources.

A three-year geographical source of revenue summary follows:

**THE CONTINUUM COMPANY, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	3/90		3/89		3/88	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$49.5	62%	\$44.8	68%	\$49.3	82%
Europe (a)	28.0	35%	16.5	25%	7.9	13%
Other	2.6	3%	4.8	7%	3.2	5%
<b>TOTAL</b>	<b>\$80.1</b>	<b>100%</b>	<b>\$66.1</b>	<b>100%</b>	<b>\$60.4</b>	<b>100%</b>

(a) Includes export revenue from the U.S. of approximately \$17.7 million in fiscal 1990 and \$7.6 million in fiscal 1989.

In addition to the headquarters office in Austin, TCC has offices in Paris (France), Frankfurt (West Germany), Camberley (England), and Tokyo (Japan).

**Computer  
Hardware**

TCC has one IBM 3090-400E (to be upgraded to a 3090-500J) installed in Austin for research and development, customer support, and processing services.



## COMPANY PROFILE

---

### **THE CONTINUUM COMPANY, INC.**

9500 Arboretum Boulevard  
Austin, TX 78759-6399  
(512) 345-5700

Ronald C. Carroll, Chairman and CEO  
Michael Long, President and COO  
Public Corporation, AMEX  
Total Employees: 680 (3/89)  
Total Revenue, Fiscal Year End  
3/31/89: \$66,144,000

---

### **The Company**

The Continuum Company, Inc. (TCC), incorporated in 1968, provides application software products, remote computing services, and professional services to the insurance industry. The company's principal product, the CLIENT/CONTRACT ADMINISTRATION (CCA) system, supports the administration and marketing of individual life, health, and annuity insurance policies.

TCC's fiscal 1989 revenue reached \$66.1 million, a 10% increase over fiscal 1988 revenue of \$60.4 million. Net income declined 52%, from \$2.5 million in fiscal 1988 to \$1.2 million in fiscal 1989. A five-year financial summary follows:

**THE CONTINUUM COMPANY, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	3/89	3/88	3/87	3/86	3/85
Revenue	\$66,144	\$60,381	\$58,201	\$52,674	\$48,393
• Percent increase from previous year	10%	4%	10%	9%	68%
Income (loss) before taxes	\$1,886	\$4,40	\$6,166	\$(3,590)	\$9,696
• Percent increase (decrease) from previous year	(53%)	(34%)	272%	(137%)	150%
Net income (loss)	\$1,201	\$2,493	\$3,227	\$(1,824)	\$5,724
• Percent increase (decrease) from previous year	(52%)	(29%)	277%	(132%)	173%
Earnings (loss) per share	\$0.28	\$0.57	\$0.75	\$(0.42)	\$1.32
• Percent increase (decrease) from previous year	(51%)	(24%)	279%	(132%)	207%

TCC management attributes fiscal 1989 results to the following:

- Revenue increases were the result of a 19% increase in service revenue for maintenance and enhancements, as well as professional and processing services.
- License revenue, primarily CCA, declined from \$10.8 million in fiscal 1988 to \$7.2 million in fiscal 1989. Contributing to the decline was the absence of new domestic license sales, reflecting difficulties and uncertainties in the insurance industry.
- Declines in net income were the result of a \$4.1 million (29%) increase in administrative, marketing, and other expenses.
  - Legal costs, including litigation initiated by TCC related to misuse of its LIFE-COMM III product, were approximately \$3.2 million. Costs associated with relocation of TCC facilities were approximately \$1.5 million. These expenses totaled \$4.7 million in fiscal 1989, compared to \$3.4 million in fiscal 1988.

- Expenses also increased about \$2.2 million as a result of expanding marketing and selling efforts, primarily outside the U.S., including initiatives in Japan, the U.K., and Europe.

Product research and development expenditures, net of capitalized costs, were approximately \$19.3 million (29% of revenue) in fiscal 1989, \$17.5 million (29% of revenue) in fiscal 1988, and \$18.0 million (31% of revenue) in fiscal 1987.

Revenue for the six months ending September 30, 1989 was \$36.6 million, a 10% increase over \$33.3 million for the same period in 1988. Net income was \$337,000, compared to net income of approximately \$1.1 million for the same period a year ago.

- License sales declined \$4.5 million, or 85%, compared to the same period in 1988. Service revenue increased \$7.8 million, or 28%, over the same period last year.
- Marketing and administration expenses for the six month period reflected continuing legal expenses, primarily litigation initiated by TCC, which totaled about \$2.7 million, compared with legal expenses of about \$1.7 million for the same period last year.

As of March 31, 1989, TCC had 680 full-time employees, segmented as follows:

Marketing, sales, and general administrative	88
Data processing operations	48
Systems development, custom systems modification, systems installation, and consulting	<u>544</u>
	680

Major competitors include Electronic Data Systems, Cybertek Computer Products, and CAPSCO-PALLM.

#### **Key Products and Services**

Approximately 11% of TCC's fiscal 1989 revenue was derived from software licenses, 46% from maintenance fees and enhancements, and 43% from professional and processing services.

A three-year summary of source of revenue, as provided by TCC, follows:

**THE CONTINUUM COMPANY, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	3/89		3/88		3/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software licenses	\$7.2	11%	\$10.8	18%	\$13.1	22%
Maintenance/enhancement	30.6	46%	22.5	37%	19.6	34%
Professional and processing services	28.3	43%	27.1	45%	25.5	44%
<b>TOTAL</b>	<b>\$66.1</b>	<b>100%</b>	<b>\$60.4</b>	<b>100%</b>	<b>\$58.2</b>	<b>100%</b>

In 1981, TCC began developing the CLIENT/CONTRACT ADMINISTRATION (CCA) System as a next-generation administrative and marketing software system for life insurance companies.

- Long-term license agreements were signed with 34 life insurance companies in 1982. A committee of customers has monitored the features and revisions as the system progressed through the development phase.
- In June 1987, TCC delivered Version 1.0 of the CCA system. Version 1.1 was delivered in February 1988; Version 1.2 in September 1988, and Version 1.3 in May 1989. Additional versions are scheduled for delivery in subsequent periods.
- The CCA System is currently TCC's main source of software license revenue. On March 31, 1989, 109 licenses covering various modules of the CCA System were outstanding to 108 separate life insurance companies.
- The CCA System is available for IBM and compatible mainframes running under MVS/XA. Modules include the following:
  - The CLIENT MANAGEMENT System is a financial services vehicle that captures and maintains client information for marketing, actuarial, and other studies. It is a generic billing, collection, asset management, and

communications tool for integrating the products and services an insurance company offers.

- The DISTRIBUTION MANAGEMENT System manages seller compensation and performance reporting requirements. The system supports multiple distribution methods, including career agents, general agencies, brokers, and dealers.
- The PRODUCT MANAGEMENT System provides actuaries with an interactive product development and pricing tool.
- The CONTRACT MANAGEMENT System handles contracts throughout their life cycle in the company, including new application processing, underwriting, issue, policy service, claims, reinsurance ceded administration, and periodic payments. Values from all of a client's existing contracts can be quoted with a single request and the system can then process at the individual contract or benefit level.
- Support services provided by TCC include maintenance, consulting, education, custom software modifications, processing, and shared-cost enhancements.
  - At the end of fiscal 1989, 55 customers had subscribed to TCC's Product Support Services for CCA software maintenance.
  - During fiscal 1989, CCA service revenue was approximately \$33 million, compared to \$17 million for fiscal 1988.

Since 1971, TCC has marketed its LIFE/70 system to the life insurance industry. In late 1984, TCC acquired LIFE-COMM III, a similar software product that had been developed by Informatics in the early 1970s.

- Both products are designed for IBM and compatible mainframes and use batch and on-line processing to provide administrative functions, such as billing and collections, agency administration, policy generation, and regulatory reporting.
- TCC no longer actively markets these products, but continues to provide subscription support services to approximately 90 companies in the life, health, and annuity insurance industry.

TCC mainframe software is available to clients as a remote computing service from the data center in Austin. The company

currently supports approximately 10 clients on a remote computing or facilities management basis.

### Industry Markets

One hundred percent of TCC's revenue is derived from the life, health, and annuity insurance industries.

The Equitable Life Assurance Society of the U.S. and its affiliates contributed approximately \$8.4 million (13% of revenue) in fiscal 1989, \$7.1 million (12% of revenue) in fiscal 1988, and \$12.5 million (21% of revenue) in fiscal 1987 to TCC's total revenue.

### Geographic Markets

Approximately 68% of TCC's fiscal 1989 revenue was derived from U.S. customers, 25% from Europe, and 7% from other international sources.

A three-year geographical source of revenue summary follows:

THE CONTINUUM COMPANY, INC.  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)

ITEM	FISCAL YEAR					
	3/89		3/88		3/87	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$44.8	68%	\$49.3	82%	\$49.8	82%
Europe	16.5	25%	7.9	13%	3.6	6%
Other	4.8	7%	3.2	5%	4.8	8%
<b>TOTAL</b>	<b>\$66.1</b>	<b>100%</b>	<b>\$60.4</b>	<b>100%</b>	<b>\$58.2</b>	<b>100%</b>

In addition to the headquarters office in Austin, TCC has offices in Paris (France), Tokyo (Japan), Toronto (Canada), and New Malden (England).

### Computer Hardware

TCC has one IBM 3090-400E installed in Austin for research and development, customer support, and processing services.

## COMPANY PROFILE

**THE CONTINUUM COMPANY, INC.**  
9500 Arboretum Boulevard  
Austin, TX 78759-6399  
(512) 345-5700

Ronald C. Carroll, Chairman, President,  
and CEO  
Public Corporation, OTC  
Total Employees: 695 (4/87)  
Total Revenue, Fiscal Year End  
3/31/87: \$58,201,000

### THE COMPANY

- The Continuum Company, Inc. (TCC), incorporated in 1968, provides application software products, remote computing services, and professional services to over 190 clients in the life, health, and annuity insurance industry.
- TCC's fiscal 1987 revenue reached \$58.2 million, a 10% increase over fiscal 1986 revenue of \$52.7 million. Net income was \$3.2 million compared to net losses of \$1.8 million for fiscal 1986. A five-year financial summary follows:

#### THE CONTINUUM COMPANY FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/87	3/86	3/85	3/84	3/83
Revenue	\$ 58,201	\$ 52,674	\$ 48,393	\$ 28,878	\$ 20,229
• Percent increase from previous year	10%	9%	68%	43%	2%
Income (loss) before taxes and extraordinary item	\$ 6,166	\$ (3,590)	\$ 9,696	\$ 3,879	\$ 858
• Percent increase (decrease) from previous year	272%	(137%)	150%	352%	(83%)
Net income (loss)	\$ 3,227	\$ (1,824)	\$ 5,724	\$ 2,100	\$ 959
• Percent increase (decrease) from previous year	277%	(132%)	173%	119%	(65%)
Earnings (loss) per share	\$ 0.75	\$ (0.42)	\$ 1.32	\$ 0.43	\$ 0.19
• Percent increase (decrease) from previous year	279%	(132%)	207%	126%	(65%)

- TCC management attributes fiscal 1987 profits primarily to a 24% increase in revenue from processing and support services and to reduced expenses when compared to fiscal 1986.
  - Software license revenue decreased 20% during fiscal 1987, primarily due to prospective customers' postponing decisions to license the CLIENT/CONTRACT ADMINISTRATION<sup>TM</sup> (CCA) System, awaiting its completion. CCA version 1.0 was made available to licensees in June 1987.
  - During 1987 TCC adopted Statement of Financial Standards Number 86 and capitalized approximately \$1.6 million (\$0.19 per share) in software development costs.
  - TCC management attributes 1986 losses primarily to increased costs associated with the services business of the LIFE-COMM III line acquired from Informatics and to delays in the scheduled delivery of CCA.
    - The LIFE-COMM III business line was incurring significant losses when acquired. Profitability was achieved on a monthly basis during the fourth quarter of fiscal 1986.
- Research and development expenditures were approximately \$18 million (31% of revenue) in fiscal 1987, \$22.5 million (43% of revenue) in fiscal 1986, and \$15.5 million (32% of revenue) in fiscal 1985.
- TCC has three subsidiaries as follows:
  - The Continuum Company, Ltd. is located in Toronto, Ontario.
  - The Continuum Company, U.K. Ltd., located in New Malden, was formed in March 1982 to serve the European marketplace.
  - Continuum Systems Research, Inc., located in Austin (TX), was established during fiscal 1982 for development of CCA, the new series of administrative insurance software products.
- Revenue for the six months ending September 30, 1987 reached \$32.8 million, a 17% increase over \$28.1 million for the same period in 1986. Net income reached \$2.3 million, compared to \$1.3 million for the same period a year ago.
- As of March 1987, TCC had approximately 690 employees, segmented as follows:

# THE CONTINUUM COMPANY, INC.

Marketing/sales	23
Research and development	145
Custom system modification	115
Customer services and consulting	300
Data processing operations	40
General and administrative	67
	690

- Major competitors include Electronic Data Systems, Cybertek Computer Products, and PALLM, Inc.

## KEY PRODUCTS AND SERVICES

- A three-year summary of source of revenue, as provided by TCC, follows (\$ millions):

FISCAL YEAR ITEM	3/87		3/86		3/85	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Software system licensing	\$13.1	23%	\$16.3	31%	\$19.8	41%
Processing and support services	45.1	77	36.3	69	28.6	59
Total	\$58.2	100%	\$52.6	100%	\$48.4	100%

- In 1979 TCC began developing the CLIENT/CONTRACT ADMINISTRATION (CCA) System, a new applications software system for designing, selling, and servicing insurance and financial services products. TCC management believes that CCA will be the company's most significant product in future periods. CCA version 1.0 was first made available to licensees in June 1987.
  - The development of CCA was initially commenced pursuant to long-term license agreements with 36 life insurance companies. A committee of customers has monitored the development of the system since its inception and has suggested features and revisions throughout the development phase.
  - The CCA System is currently TCC's main source of software license revenue. On March 31, 1987, 104 licenses covering various modules of the CCA System had been sold to 101 separate life insurance companies. As of September 30, 1987, there were 107 CCA licenses.

## THE CONTINUUM COMPANY, INC.

- CCA is designed for IBM and compatible mainframes running under MVS and XA.
- CCA features include the following:
  - The system supports a full range of insurance plans: traditional life plans; contemporary life plans, such as universal life, variable universal life, and excess interest whole life; traditional and contemporary annuities; accident and health insurance; supplemental benefits; and equity-linked products, as well as some asset management facilities.
  - Client-level processing provides the user with the following features: risk selection, prior insurance search, resolicitation, prospect lists, agent follow-up, reinsurance, correspondence, client accounting, billing and collection, and market analysis.
  - The contract administration functions in CCA provide realtime processing of financial transactions, benefit administration, reinstatements, surrenders/claims, and complex changes.
  - CCA also assists the user in developing and introducing new products. The system provides realtime, interactive product development functions; product pricing, profitability analysis and projection; and tabular values or calculations from first principles.
  - New business functions include reinsurance selection, extensive underwriting support, issue and assembly support, and regulatory monitoring.
  - CCA supports marketing, productivity, and sales and service, as well as providing agency and compensation administration. It provides sales and service aids by using consolidated contract information by client. It also allows agents to monitor new cases and in-force business, including prescheduled contract changes.
- CCA consists of four modules as follows:
  - The CLIENT MANAGEMENT System is a financial services vehicle that captures and maintains client information for marketing, actuarial, and other studies. It is a generic billing, collection, asset management, and communications tool for integrating the products and services a company offers.
  - The DISTRIBUTION MANAGEMENT System manages compensation and performance reporting requirements. Multiple distribution methods including career agents, general agencies, brokers, and dealers, may be used by a company and be fully supported.

## THE CONTINUUM COMPANY, INC.

User-defined parameters accommodate traditional and nontraditional compensation arrangements as well as single-case agreements. Production and persistency statistics may be kept for management reporting.

- The PRODUCT MANAGEMENT System provides actuaries with an interactive product development and pricing tool.
- The CONTRACT MANAGEMENT System handles contracts throughout their life cycle in the company including new application processing, underwriting, issue, policy service, claims, reinsurance ceded administration, and periodic payments. With a single request, values from all of a client's existing contracts can be quoted, and the system can then process at the individual contract or benefit level.
- CONTINUUM (LIFE/70®), introduced in 1971, is a full-function policy administration system for the life, health, and annuity insurance industry.
  - CONTINUUM operates on IBM and compatible mainframes running under OS, DOS/VSE, MVS, and XA. There are approximately 90 installations.
  - CONTINUUM uses a common data base and may be tailored to meet individual company requirements. Any combination of coverages may be included in a single policy or account record. Multi-company processing allows for policy administration by block of business. Available system components include the following:
    - Home Office Administration Systems.
      - New Business handles all application processing, including underwriting support through policy issuance.
      - Policy Administration administers in-force policies from the time of issue until termination.
      - Premium Billing and Collection facilitates premium collection with standard, special frequency, and combined billing capabilities and complete reentry processing.
      - General Accounting satisfies general ledger, check disbursement, reconciliation, and annual statement requirements.
      - The Agency System provides field agent recordkeeping, compensation, production, and persistency reporting.

- Support Systems.
  - Plan Values generates various actuarial values for each issue age of an insurance plan.
  - Policy Exhibit periodically reports on increases and decreases in in-force insurance amounts. Periodic or annual reserves released reports are also available.
  - The Valuation System establishes non-ledger asset and liability amounts for insurance benefits and values maintained in the policy master file.
  - Rates and Values independently creates and maintains rates and values files, building data bases required by CONTINUUM.
- Optional Systems are available separately, but are typically sold with CONTINUUM.
  - Bond and Stock maintains and reports on current bond and stock portfolio information.
  - Group Life and Health Insurance is a comprehensive administration and claims system developed to accommodate group life, health, and disability products.
  - Extended Actuarial includes Gross Premium Planning, Adjusted Earnings, and Sales Profit Analysis systems.
- LIFE-COMM<sup>®</sup>, acquired from Informatics in December 1984, is an integrated administrative system that supports new business, policy, agency, and actuarial administration; corporate accounting; and field force requirements. The system processes both traditional and nontraditional lines of business, including variable life, universal life, variable universal life, flexible premium annuities, and variable annuities.
  - Total functional support of insurance company operations is available through 20 LIFE-COMM subsystems, including underwriting, policy maintenance, agent compensation, billing, collection, valuation, accounting and reporting, actuarial services, policy services, suspense control, agents performance, policy exhibit, correspondence, check-writing, 1099 reporting, proxy, on-line support, technical environment, agency extension, and alpha index.
  - LIFE-COMM operates on IBM and compatible mainframes running under OS, DOS, DOS/VSE, and MVS. There are currently approximately 60 LIFE-COMM systems installed.
- TCC provides customer support and professional services as follows:

## THE CONTINUUM COMPANY, INC.

- As of March 31, 1987, 110 customers have subscribed to system support programs that provide maintenance and systems enhancement services for TCC's mainframe products.
  - The Comprehensive User Product Support (CUPS) subscription program is based on the concept of shared cost development. Clients with similar needs join to cost-share the development of desired system enhancements. During fiscal 1987 there were 66 CONTINUUM clients and 39 LIFE-COMM clients participating in product support agreements.
- Professional services, including custom programming, systems design, and project management are provided in such areas as:
  - Hardware/software selection.
  - Systems performance evaluations.
  - Conversion, modification, and installation support.
  - Training and education.
  - Organizational analysis.
  - Actuarial consulting.
  - Management information and planning.
  - Productivity improvement.
  - Feasibility studies.
- TCC offers Accelerated Project, a special package of services that speeds the education and installation process in order to meet critical product introduction dates. Over 40 customers have used this service.
- TCC mainframe software is available to clients as a remote computing service from the data center in Austin. The company currently supports 10 clients on a remote computing or facilities management basis. Disaster recovery services are also available.

### INDUSTRY MARKETS

- One hundred percent of TCC's revenue is derived from the life, health, and annuity insurance industries.

### GEOGRAPHIC MARKETS

- Approximately 94% of TCC's fiscal 1987 revenue was derived from clients throughout the U.S. The remaining 6% was derived from international sources, primarily Canada and the U.K.
- U.S. offices are located in Toronto (Canada) and New Malden (England). During fiscal 1987, TCC expanded its international marketing to Japan, Australia, and Continental Europe. In Japan, TCC is represented by Nippon Software.

THE CONTINUUM COMPANY, INC.

## COMPUTER HARDWARE AND SOFTWARE

- TCC operates a data center in Austin with the following computers installed:
  - 1 IBM 3084QX, MVS/XA.
  - 1 IBM 3090, 180, VM/CMS.

# FINANCIAL UPDATE TO PROFILE DATED DECEMBER 1985

THE CONTINUUM COMPANY, INC.  
3429 Executive Center Drive  
Austin, TX 78731-1676  
(512) 345-5700

Ronald C. Carroll, Chairman, President,  
and CEO  
Public Corporation, OTC  
Total Employees: 700  
Total Revenue, Fiscal Year End  
3/31/86: \$52,674,000

## THE CONTINUUM COMPANY FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/86	3/85	3/84	3/83	3/82
Revenue (a)	\$ 52,674	\$ 48,393	\$ 28,878	\$ 20,229	\$ 19,805
• Percent increase from previous year	9%	68%	43%	2%	27%
Income (loss) before taxes and extraordinary item	\$ (3,590)	\$ 9,696	\$ 3,879	\$ 858	\$ 5,032
• Percent increase (decrease) from previous year	(137%)	150%	352%	(83%)	25%
Net income (loss)	\$ (1,824)	\$ 5,724	\$ 2,100	\$ 959	\$ 2,728
• Percent increase (decrease) from previous year	(132%)	173%	119%	(65%)	23%
Earnings (loss) per share (b)	\$ (0.42)	\$ 1.32	\$ 0.43	\$ 0.19	\$ 0.55
• Percent increase (decrease) from previous year	(132%)	207%	126%	(65%)	22%

- (a) Revenue for fiscal 1984, 1983, 1982, and 1981 has been restated to reflect a change in the method of accounting for interest and dividend income.
- (b) Adjusted to reflect a 100% stock dividend paid on September 21, 1984 and a 50% stock dividend paid on March 29, 1985.
- TCC management attributes 1986 losses primarily to increased costs associated with the services business of the LIFE-COMM III line acquired from Informatics and to delays in the scheduled delivery of the CLIENT/CONTRACT ADMINISTRATION (CCA) System.

- The LIFE-COMM III business line was incurring significant losses when acquired. Profitability was achieved on a monthly basis during the fourth quarter of fiscal 1986.
- Revenue for the three months ending June 30, 1986 was approximately \$14.1 million, compared to nearly \$14 million for the same period in 1985. Net income reached \$630,000 compared to \$169,000 for the same quarter a year ago.

#### SOURCE OF REVENUE

- INPUT estimates approximately 31% of TCC's fiscal 1986 revenue was derived from application software product licenses, 62% from associated support, enhancements, and customization services, and 7% from processing services.
- A three-year summary of source of revenue, as provided by TCC, follows (\$ millions):

FISCAL YEAR ITEM	3/86		3/85		3/84	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Software system licensing	\$ 16.3	31%	\$ 19.8	41%	\$ 9.0	31%
Processing and support services	36.3	69	28.6	59	19.9	69
Total	\$ 52.6	100%	\$ 48.4	100%	\$ 28.9	100%

- Revenue from software system licensing decreased 17% during fiscal 1986, primarily due to a decreased rate of revenue recognition associated with licenses for CCA.
- Revenue from processing and support services increased 27% during fiscal 1986, primarily as a result of support services associated with the LIFE-COMM III product line.
- Approximately 95% of TCC's fiscal 1986 revenue was derived from the U.S. The remaining 5% was derived from Canada and the U.K.
- TCC operations in Canada and the U.K. incurred net losses of \$401,000 during fiscal 1986, compared to net income of \$24,000 in fiscal 1985.

## COMPANY PROFILE

THE CONTINUUM COMPANY, INC.  
3429 Executive Center Drive  
Austin, TX 78731  
(512) 345-5700

Ronald C. Carroll, Chairman, President,  
and CEO  
Public Corporation, OTC  
Total Employees: 740  
Total Revenue, Fiscal Year End  
3/31/85: \$48,393,000

---

### THE COMPANY

- The Continuum Company, Inc. (TCC), incorporated in 1968, provides applications software products, remote computing services, and professional services to over 190 clients in the life, health, and annuity insurance industry.
  - For fiscal 1983, 1984, and until April 30, 1984, approximately 58% of TCC's outstanding common stock was owned indirectly by Baldwin-United Corporation, a diversified financial services holding company located in Cincinnati. On April 30, 1984, TCC purchased 205,867 of its common shares from Baldwin-United for \$5 million, and Continuum Holdings Company, a limited partnership whose partners include executives of TCC and its subsidiaries, purchased Baldwin-United's remaining interest in TCC (741,123 common shares) for \$18 million. TCC subsequently cancelled the shares it acquired and on March 31, 1985, Continuum Holdings Company owned approximately 52% of TCC's outstanding common shares.
  - In fiscal 1984 and 1983 TCC sales to Baldwin-United subsidiaries were \$1,576,000 and \$2,313,000, respectively.
- TCC's fiscal 1985 revenue increased 68% to \$48.4 million from \$28.9 million in fiscal 1984. Net income reached \$5.7 million, a 173% increase over \$2.1 million for 1984. A five-year financial summary follows:

THE CONTINUUM COMPANY  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/85	3/84	3/83	3/82	3/81
Revenue (a)	\$ 48,393	\$ 28,878	\$ 20,229	\$ 19,805	\$ 15,535
• Percent increase from previous year	68%	43%	2%	27%	69%
Income before taxes and extraordinary item	\$ 9,696	\$ 3,879	\$ 858	\$ 5,032	\$ 4,011
• Percent increase (decrease) from previous year	150%	352%	(83%)	25%	37%
Net income	\$ 5,724	\$ 2,100	\$ 959	\$ 2,728	\$ 2,213
• Percent increase (decrease) from previous year	173%	119%	(65%)	23%	37%
Earnings per share (b)	\$ 1.32	\$ 0.43	\$ 0.19	\$ 0.55	\$ 0.45
• Percent increase (decrease) from previous year	207%	126%	(65%)	22%	22%

(a) Revenue for fiscal 1984, 1983, 1982, and 1981 has been restated to reflect a change in the method of accounting for interest and dividend income.

(b) Adjusted to reflect a 100% stock dividend paid on September 21, 1984 and a 50% stock dividend paid on March 29, 1985.

- TCC management attributes the company's growth in revenue from 1983 through 1985 primarily to the increase in the number of license sales for the CLIENT/CONTRACT ADMINISTRATION<sup>TM</sup> (CCA) System currently being developed by TCC.
- Research and development expenditures were approximately \$15.5 million (32% of revenue) in fiscal 1985, \$12 million (42% of revenue) in fiscal 1984, and \$7.3 million (36% of revenue) in fiscal 1983.
- On December 21, 1984, TCC acquired the assets of the Life Insurance Systems and Sigma divisions of Informatics General Corporation for a secured promissory note of \$7 million. The acquisition was accounted for as a purchase.
  - As a result of the acquisition, TCC gained ownership to Informatics' LIFE-COMM III integrated life insurance administration system and Sigma, a series of micro software products for life insurance agents.

THE CONTINUUM COMPANY, INC.

At the time of the acquisition, Informatics had LIFE-COMM license arrangements with more than 50 insurance companies in the top 300 life insurance companies in the U.S.

- The two divisions had approximately 200 employees at the time of the acquisition and generated annual revenue of approximately \$25 million in 1984. The operations were incurring significant losses when acquired and continued to incur losses through the remainder of fiscal 1985.
- TCC continues to operate former offices of Informatics in Dallas for support of LIFE-COMM clients and in South Windsor (CT) for Sigma products.
- Development of "Financial Manager" software, initiated by Informatics, has been terminated.
- Revenue for the six months ending September 30, 1985 reached nearly \$28 million, a 47% increase over revenue of approximately \$19 million for the same period in 1984. Net income for the period was \$267,000, an 89% decline from \$2.5 million for the same period in 1984. TCC management attributes income declines to continuing significant research and development expenditures associated with the CCA System and to increased costs resulting from the poor performance of businesses acquired by TCC from Informatics in late 1984.
- TCC currently has approximately 740 employees, segmented as follows:

Marketing/sales	21
Research and development	304
Custom system modification	99
Customer services and consulting	206
Data processing operations and administrative	<u>110</u>
	740

- TCC has three subsidiaries.
  - The Continuum Company, Ltd. is located in Toronto, Ontario.
  - The Continuum Company, U.K. Ltd., located in New Malden, was formed in March 1982 to serve the European marketplace.
  - Continuum Systems Research, Inc., located in Austin, was established during fiscal 1982 for development of the CLIENT/CONTRACT ADMINISTRATION System, a new series of administrative insurance software products.
- Major competitors include Cybertek Computer Products and PALLM, Inc.

# KEY PRODUCTS AND SERVICES

- INPUT estimates approximately 41% of TCC's fiscal 1985 revenue was derived from software product licenses, 12% from processing services, and 47% from professional and support services.
- A three-year summary of source of revenue, as provided by TCC, follows (\$ millions):

FISCAL YEAR ITEM	3/85		3/84		3/83	
	Revenue	Percent of Total	Revenue	Percent of Total	Revenue	Percent of Total
Software system licensing	\$19.8	41%	\$ 9.0	31%	\$ 5.0	25%
Processing and support services	<u>28.6</u>	<u>59</u>	<u>19.9</u>	<u>69</u>	<u>15.2</u>	<u>75</u>
Total	\$48.4	100%	\$ 28.9	100%	\$ 20.2	100%

- In 1979 TCC began developing the CLIENT/CONTRACT ADMINISTRATION<sup>TM</sup> (CCA) System, a new applications software system for designing, selling, and servicing insurance and financial services products. TCC management believes that the CCA System will be the company's most significant product in future periods.
  - The development of the CCA System was initially commenced pursuant to long-term license agreements with 36 life insurance companies. A committee of customers has monitored the development of the system since its inception and has suggested features and revisions throughout the development phase.
  - The CCA System is designed for IBM and compatible mainframes running under OS/VS, DOS/VSE, MVS, and XA.
  - The CCA System features include the following:
    - The system supports a full range of insurance plans: traditional life plans; contemporary life plans, such as universal life, variable universal life, and excess interest whole life; traditional and contemporary annuities; accident and health insurance; supplemental benefits; and equity-linked products, as well as some asset management facilities.
    - Client-level processing provides the user with the following features: risk selection, prior insurance search, resolicitation,

prospect lists, agent follow-up, reinsurance, correspondence, client accounting, billing and collection, and market analysis.

- The contract administration functions in CCA provide realtime processing of financial transactions, benefit administration, reinstatements, surrenders/claims, and complex changes.
- CCA also assists the user in developing and introducing new products. The system provides realtime, interactive product development functions; product pricing; profitability analysis and projection; and tabular values or calculations from first principles.
- New business functions include reinsurance selection, extensive underwriting support, issue and assembly support, and regulatory monitoring.
- CCA supports marketing, productivity, and sales and service, as well as providing agency and compensation administration. It provides sales and service aids by using consolidated contract information by client. It also allows agents to monitor new cases and in-force business, including prescheduled contract changes.

- CCA consists of four modules as follows:

- The CLIENT MANAGEMENT System is a financial services vehicle that captures and maintains client information for marketing, actuarial, and other studies. It is a generic billing, collection, asset management, and communications tool for integrating the products and services a company offers. Beta testing of the CLIENT MANAGEMENT System has been completed and availability is scheduled for late 1985.
- The PRODUCT MANAGEMENT System provides actuaries with an interactive product development and pricing tool. Beta testing of the system has been completed and availability is scheduled for early 1986.
- The CONTRACT MANAGEMENT System handles contracts throughout their life cycle in the company including new application processing, underwriting, issue, policy service, claims, reinsurance ceded administration, and periodic payments. With a single request, values from all of a client's existing contracts can be quoted, and the system can then process at the individual contract or benefit level. Availability of the system is scheduled for 1986.
- The Distribution Management System manages compensation and performance reporting requirements. Multiple distribution

methods including career agents, general agencies, brokers, and dealers, may be used by a company and be fully supported. User-defined parameters accommodate traditional and nontraditional compensation arrangements as well as single-case agreements. Production and persistency statistics may be kept for management reporting. Availability of the system is scheduled for 1986.

- The CCA System is currently TCC's main source of software license revenue. On March 31, 1985, 82 licenses covering various modules of the CCA System had been sold to 79 separate life insurance companies. There are currently over 90 CCA licenses.
- TCC has offered CCA licenses at a discount to participants in Informatics' project for the development of "Financial Manager" software. Fourteen such customers signed agreements for CCA licenses prior to March 31, 1985 and approximately \$3.2 million in revenue was recognized from those agreements in the fourth quarter of 1985.
- TCC's CONTINUUM® Systems, introduced in 1971, is a full-function policy administration system for the life, health, and annuity insurance industry.
  - CONTINUUM Systems operates on IBM and compatible mainframes running under OS, DOS/VSE, MVS, and XA. There are 120 installations.
  - CONTINUUM Systems uses a common data base and may be tailored to meet individual company requirements. Any combination of coverages may be included in a single policy or account record. Multi-company processing allows for policy administration by block of business. Available system components include the following:
    - Home Office Administration Systems.
      - New Business handles all application processing, including underwriting support through policy issuance.
      - Policy Administration administers in-force policies from the time of issue until termination.
      - Premium Billing and Collection facilitates premium collection with standard, special frequency, and combined billing capabilities and complete reentry processing.
      - General Accounting satisfies general ledger, check disbursement, reconciliation, and annual statement requirements.
      - The Agency System provides field agent record keeping, compensation, production, and persistency reporting.

- Support Systems.
  - Plan Values generates various actuarial values for each issue age of an insurance plan.
  - Policy Exhibit periodically reports on increases and decreases in in-force insurance amounts. Periodic or annual reserves released reports are also available.
  - The Valuation System establishes non-ledger asset and liability amounts for insurance benefits and values maintained in the policy master file.
  - Rates and Values independently creates and maintains rates and values files, building data bases required by the CONTINUUM Systems.
- Optional Systems are available separately, but are typically sold with the CONTINUUM Systems.
  - Bond and Stock maintains and reports on current bond and stock portfolio information.
  - Group Life and Health Insurance is a comprehensive administration and claims system developed to accommodate group life, health, and disability products.
  - Extended Actuarial includes Gross Premium Planning, Adjusted Earnings, and Sales Profit Analysis systems.
- LIFE-COMM III, acquired from Informatics in 1984, is an integrated administrative system that supports new business, policy, agency, and actuarial administration; corporate accounting; and field force requirements. The system processes both traditional and nontraditional lines of business, including variable life, universal life, variable universal life, flexible premium annuities, and variable annuities.
  - Total functional support of insurance company operations is available through 20 LIFE-COMM subsystems, including underwriting, policy maintenance, agent compensation, billing, collection, valuation, accounting and reporting, actuarial services, policy services, suspense control, agents performance, policy exhibit, correspondence, check-writing, 1099 reporting, proxy, on-line support, technical environment, agency extension, and alpha index.
  - LIFE-COMM III operates on IBM and compatible mainframes running under OS, DOS, DOS/VSE, and MVS. There are currently 70 LIFE-COMM III systems installed.

- Microcomputer software products available from TCC include the following:
  - The Continuum Life Agency Support System (CLASS) is a set of business tools for insurance agents that provides sales proposals for traditional and non-traditional products, client financial needs analysis, and client information management.
    - Features include help messages on all data fields, an integrated documentation system delivering user documentation in diskette form, and a telecommunications module for home office/agent communications.
    - CLASS operates on IBM and compatible microcomputers. There are currently over 5,000 field offices using components of the CLASS system.
  - Sigma<sup>®</sup> software is a series of microcomputer programs for agency management.
    - Subsystems are available for client management, proposals for traditional and non-traditional products, and financial planning.
    - Sigma software operates on IBM and compatible microcomputers. There are currently nearly 10,000 agents using Sigma products.
- TCC provides customer support and professional services as follows:
  - As of March 31, 1985, 132 customers have subscribed to system support programs that provide maintenance and systems enhancement services for TCC's mainframe products.
    - The Comprehensive User Product Support (CUPS) subscription program is based on the concept of shared cost development. Clients with similar needs join to cost-share the development of desired system enhancements.
  - Professional services, including custom programming, systems design, and project management are provided in such areas as:
    - Hardware/software selection.
    - Systems performance evaluations.
    - Conversion, modification, and installation support.
    - Training and education.
    - Organizational analysis.
    - Actuarial consulting.
    - Management information and planning.
    - Productivity improvement.
    - Feasibility studies.

## THE CONTINUUM COMPANY, INC.

- TCC offers Accelerated Project, a special package of services that speeds the education and installation process in order to meet critical product introduction dates. Over 45 customers have used this service.
- TCC mainframe software is available to clients as a remote computing service from data centers located in Austin and Dallas. The company currently supports 14 clients on a remote computing or facilities management basis. Disaster recovery services are also available.

### INDUSTRY MARKETS

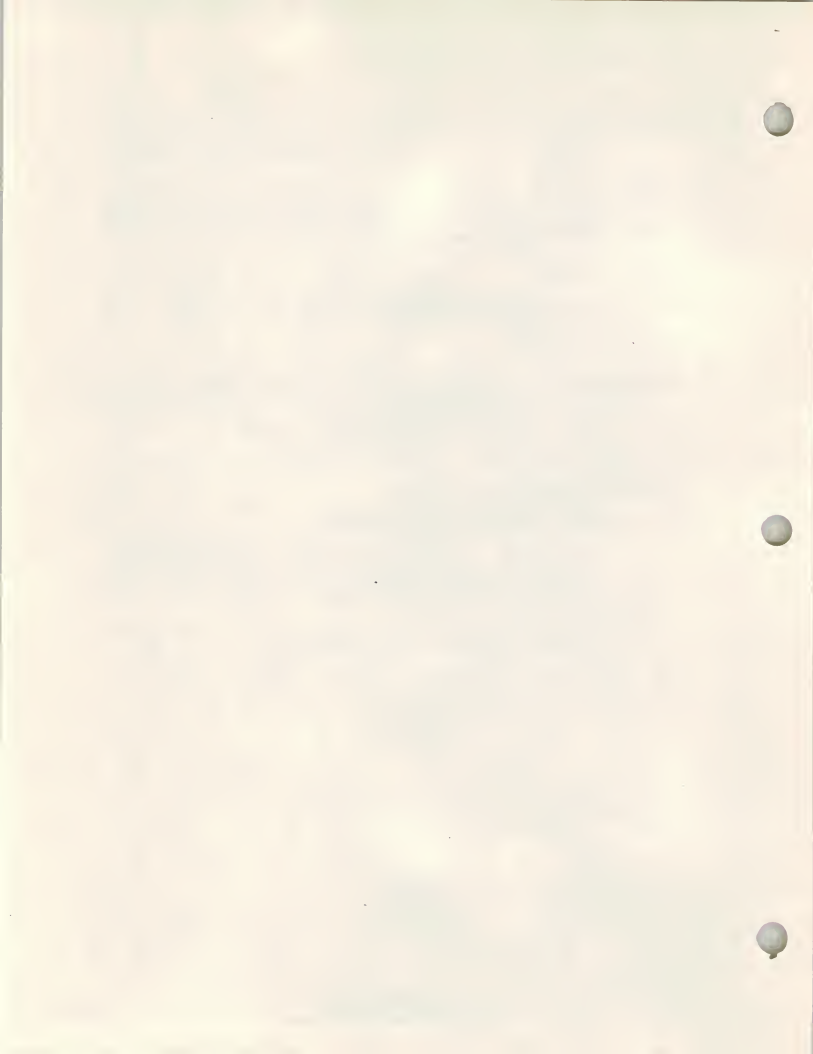
- One hundred percent of TCC's revenue is derived from the life, health, and annuity insurance industries.

### GEOGRAPHIC MARKETS

- Approximately 93% of TCC's fiscal 1985 revenue was derived from clients throughout the U.S. The remaining 7% was derived from Canada and the U.K.
- U.S. offices are located in Austin, Dallas, and New Windsor (CT).
- Foreign offices are located in Toronto (Canada) and New Malden (England).

### COMPUTER HARDWARE AND SOFTWARE

- TCC operates data centers in Austin and Dallas.
  - The Austin data center handles processing for CONTINUUM Systems and CCA clients and uses an IBM 3084QX, operating under MVS/XA and VM/CMS. The center also has an IBM 3033MP operating under VM/CMS for research and development.
  - The Dallas data center handles processing for LIFE-COMM III clients and uses an Amdahl V8, operating under MVS.
- TCC data centers are accessed via leased lines, Tymnet, and Telenet.



# FINANCIAL UPDATE TO HIGHLIGHT DATED SEPTEMBER 1982

THE CONTINUUM COMPANY, INC.  
3429 Executive Center Drive  
Austin, TX 78731  
(512) 345-5700

Ronald C. Carroll, Chairman  
Lawrence D. Sault, President  
Public Corporation, OTC  
Total Employees: 380  
Total Revenue, Fiscal Year End  
3/31/83: \$20,645,572

## THE CONTINUUM COMPANY FIVE-YEAR FINANCIAL SUMMARY (\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/83	3/82	3/81	3/80	3/79
Revenue	\$ 20,646	\$ 20,248	\$ 15,825	\$ 9,347	\$ 4,985
• Percent increase from previous year	2%	28%	69%	88%	8%
Income before taxes	\$ 858	\$ 5,032	\$ 4,011	\$ 2,931	\$ 386
• Percent increase (decrease) from previous year	(83%)	25%	37%	659%	58%
Net income	\$ 959	\$ 2,728	\$ 2,213	\$ 1,613	\$ 173
• Percent increase (decrease) from previous year	(65%)	23%	37%	832%	75%
Earnings per share	\$ 0.59	\$ 1.66	\$ 1.36	\$ 0.97	\$ 0.11
• Percent increase (decrease) from previous year	(64%)	22%	40%	782%	83%

### SOURCE OF REVENUE

- INPUT estimates Continuum's revenue for fiscal 1983 was derived as follows:

Type of Service	Percent of Revenue	Revenue (\$ thousands)
Software products	44%	\$ 9,000
Professional services	40	8,229
Processing services	14	3,000
Other (interest)	<u>2</u>	<u>417</u>
	100%	\$ 20,646



## COMPANY HIGHLIGHT

**THE CONTINUUM COMPANY, INC.**  
3429 Executive Center Drive  
Austin, TX 78731  
(512) 345-5700

Ronald C. Carroll, Chairman and CEO  
Lawrence D. Sault, President  
Public Corporation, OTC  
Total Employees: 320  
Total Revenue, Fiscal Year End  
3/31/82: \$20,248,429

---

### THE COMPANY

- The Continuum Company, Inc. (TCC) was incorporated in Texas in 1968 under the name TCC, Inc. The corporate name was changed in September 1979. TCC has provided professional services, software products, and remote computing services to over 200 clients in the life, health, and annuity insurance industry since its inception.
  - Approximately 58% of TCC's common stock is owned by Baldwin-United Corporation, a diversified financial services holding company headquartered in Cincinnati. Its interests include life and casualty insurance companies, banking and finance, and musical instruments. In 1980, Baldwin-United purchased the Phoenix Corporation, a holding company owning 55% of the outstanding stock of TCC.
  - Fiscal 1982 sales to subsidiaries of Baldwin-United were \$1.9 million, or nine percent of total TCC revenue.
- TCC's fiscal 1982 revenue increased 28% to \$20.2 million from \$15.8 million in 1981. Net income increased 23% to \$2.7 million from \$2.2 million during the same period. A five-year financial summary follows:

THE CONTINUUM COMPANY, INC.

THE CONTINUUM COMPANY  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)

ITEM \ FISCAL YEAR	3/82	3/81	3/80	3/79	3/78
Revenue	\$20,248	\$15,825	\$ 9,347	\$ 4,985	\$ 4,605
• Percent increase from previous year	28%	69%	88%	8%	3%
Income before taxes and extraordinary item	\$ 5,032	\$ 4,011	\$ 2,931	\$ 386	\$ 244
• Percent increase from previous year	25%	37%	659%	58%	24%
Net income	\$ 2,728	\$ 2,213	\$ 1,613	\$ 173	\$ 99
• Percent increase from previous year	23%	37%	832%	75%	34%
Earnings per share (a)	\$ 1.66	\$ 1.36	\$ 0.97	\$ 0.11	\$ 0.06
• Percent increase from previous year	22%	40%	782%	83%	20%

(a) Per share amounts are adjusted for two-for-one stock split of January 5, 1981.

- Management attributes increase in 1982 revenue primarily to sales of its new Marketing System software, which provides for advanced products including special annuities and Universal Life.
- Expenditures for research and development were \$3.4 million in fiscal 1982 and \$2.6 million in fiscal 1981.
- TCC has three subsidiaries.
  - The Continuum Company, Ltd. is located in Toronto, Ontario.
  - The Continuum Company, U.K. Ltd., located in London, was formed in March 1982 to serve the European marketplace.
  - Continuum Systems Research, Inc., located in Austin, was established during fiscal 1982 for development of a new series of administrative insurance software products.
- During fiscal 1982 TCC formed a joint venture with Aplitec Computer Systems, Inc. of Houston, a firm specializing in insurance-related software. Aplitec's life insurance and tax planning proposal systems are the basis of the CONTINUUM Marketing System. Under the exclusive agreement, the software is both licensed by TCC and available as applications on its remote computing service.

## KEY PRODUCTS AND SERVICES

- INPUT estimates TCC revenue for fiscal 1982 was derived as follows:

<u>Type of Service</u>	<u>Percent of Revenue</u>	<u>Revenue (\$ thousands)</u>
Professional services	47%	\$ 9,515
Software products	36	7,290
Processing services	15	3,000
Other (interest)	<u>2</u>	<u>443</u>
	100%	\$20,248

- Of the 36% of revenue derived from software products, approximately 17% was from license fees and 19% from fees for enhancements and maintenance.
- TCC's CONTINUUM Systems (formerly LIFE/70) is an integrated set of on-line software systems encompassing home office and field administration for life, health, annuity, and Universal Life insurance products. Introduced in 1970, CONTINUUM Systems have generated over \$65 million in licensing and support revenue. The systems operate on IBM 360, 370, 303X, 43XX, and plug-compatible mainframes running under OS, MVS, DOS, DOS/VSE, and OS/VS. There are 96 installations.
- CONTINUUM Systems use a common data base and may be tailored to meet individual company requirements. Any combination of coverages may be included in a single policy or account record. Multi-company processing allows for policy administration by block of business. Available system components include the following:
  - Home Office Administration Systems.
    - New Business handles all application processing, including underwriting support through policy issuance.
    - Policy Administration administers in-force policies from the time of issue until termination.
    - Premium Billing and Collection facilitates premium collection with standard, special frequency, and combined billing capabilities and complete reentry processing.
    - General Accounting satisfies general ledger, check disbursement, reconciliation, and annual statement requirements.
    - The Agency System provides field agent record keeping, compensation, production, and persistency reporting.

## THE CONTINUUM COMPANY, INC.

- Support Systems.
  - Plan Values generates various actuarial values for each issue age of an insurance plan.
  - Policy Exhibit periodically reports on increases and decreases in in-force insurance amounts. Periodic or annual reserves released reports are also available.
  - The Valuation System establishes non-ledger asset and liability amounts for insurance benefits and values maintained in the policy master file.
  - Rates and Values independently creates and maintains rates and values files, building data bases required by the CONTINUUM Systems.
- Optional Systems are available separately, but are typically sold with the CONTINUUM Systems.
  - Bond and Stock maintains and reports on current bond and stock portfolio information.
  - Group Life and Health Insurance is a comprehensive administration and claims system developed to accommodate group life, health, and disability products.
  - Extended Actuarial includes Gross Premium Planning, Adjusted Earnings, and Sales Profit Analysis systems.
- The CONTINUUM Marketing System, introduced in 1981, provides analysis of proposed insurance policies. Accurate values projections are produced for flexible life insurance plans, including special annuities and Universal Life. A series of computerized proposal and illustration aids simplify the life insurance sales process.
  - There are 30 installations of the product, which operates on IBM and plug-compatible mainframe equipment as well as the IBM Personal Computer, TRS-80, and Apple equipment.
- The Client Contract and Administration System (CCA), under development by Continuum Systems Research, is a new generation of administrative insurance software which allows users to adapt to complex changes imposed by economic, regulatory, and consumer requirements. System releases will begin in Fall 1982.
- TCC's Comprehensive User Product Services (CUPS), first offered in 1979, are based on the concept of shared cost development. Clients are provided with maintenance and enhancements for existing and newly-developed software

## THE CONTINUUM COMPANY, INC.

products. Subscribers receive everything accomplished under the CUPS plan for a fixed annual fee. In fiscal 1982, 58 subscribers generated over \$4 million in revenue.

- TCC provides professional services, including custom programming, systems design, and project management in such areas as:
  - Hardware/software selection.
  - Systems performance evaluations.
  - Conversion, modification, and installation support for CONTINUUM Systems.
  - Training and education.
  - Organizational analysis.
  - Actuarial consulting.
  - Management information and planning.
  - Productivity improvement.
  - Feasibility studies.
  - DOS and OS implant services. The implant transfers object or machine executable code from one computer to another or from one region to another on the same computer, eliminating the need to assemble and compile the entire system.
- TCC software is available as applications on its remote computing service, in either remote batch or interactive modes. TCC also offers a Disaster Contingency Plan which provides necessary backup service, equipment, programmers, and off-site data storage facilities to assure continuous operations for Plan clients.

### INDUSTRY MARKETS

- One hundred percent of TCC revenue is derived from insurance companies, primarily life insurance firms.

### GEOGRAPHIC MARKETS

- TCC derived 95% of its fiscal 1982 revenue from clients throughout the U.S. The remaining 5% of revenue is international and stems from Canada, Mexico, Europe, Israel, and South America.
  - U.S. sales are coordinated through TCC's Austin headquarters.

THE CONTINUUM COMPANY, INC.

- Products are marketed internationally through TCC's Canadian and European subsidiaries, located in Toronto and London. Sales agency agreements with Advanced Technology, Ltd. of Israel and Sinergica of Venezuela were completed in fiscal 1982.

COMPUTER HARDWARE AND SOFTWARE

- The following equipment is installed at TCC's Austin data center:
  - 1 IBM 370/158, running under MVS and DOS/VSE.
  - 1 IBM 3033, running under MVS and DOS/VSE.
- TCC mainframes are accessed via AT&T Long Lines, Tymnet, and Telenet.

## COMPANY HIGHLIGHT

**THE CONTINUUM COMPANY, INC.**  
3429 Executive Center Dr.  
Austin, TX 78731  
(512) 345-5700

Ronald C. Carroll, President  
Public Corporation, OTC  
Total Employees: 260  
Total Revenues Fiscal Year  
End 3/31/80: \$9,347,135

### THE COMPANY

- The Continuum Company, Inc. (TCC) was incorporated in Texas in 1968. It was called TCC, Inc. until January 1980 when its corporate name was changed to The Continuum Company, Inc. The Continuum Company specializes in software products and professional services for the life, health and annuity insurance industry.
- In July 1980, Baldwin United Corporation of Cincinnati (OH) purchased the Phoenix Corporation, a holding company owning 55% of the outstanding stock of TCC, for \$8,250,000.
- TCC's revenues for FY 1980 increased 84% over 1979. During the same period, net income increased 832%. TCC's financial summary for the past five years follows:

#### THE CONTINUUM COMPANY FIVE-YEAR FINANCIAL SUMMARY (\$ THOUSANDS, EXCEPT PER SHARE DATA, FYE 3/31)

ITEM \ FISCAL YEAR	1980	1979	1978	1977	1976
Revenues	\$ 9,347	\$ 4,985	\$ 4,605	\$ 4,481	\$ 4,534
• Percent increase (decrease) from previous year	87%	8%	3%	(1%)	N/A
Income (loss) before income taxes	\$ 1,613	\$ 173	\$ 99	\$ 74	\$ (526)
• Percent increase from previous year	832%	75%	34%	—	
Net income (loss)	\$ 1,613	\$ 173	\$ 99	\$ 74	\$ (526)
• Percent increase from previous year	832%	75%	34%	—	
Earnings per share	\$ 2.06	\$ 0.22	\$ 0.13	\$ 0.09	\$ (0.67)
• Percent increase from previous year	836%	69%	44%	—	

## COMPANY HIGHLIGHT/THE CONTINUUM COMPANY, INC.

- TCC management attributes the dramatic growth in FY 1980 revenues to increased sales in all categories of its systems and professional services.
- There are 260 employees of The Continuum Company, divided as follows:

- Marketing sales	7
- Software services/customer support	171
- Computer operations	65
- General and administrative	<u>17</u>
	260

### KEY PRODUCTS AND SERVICES

- A breakdown of TCC's revenues, by type of service, follows:

TYPE	PERCENT OF REVENUE	REVENUE (\$ 000s)
Professional services	50%	\$4,674
Software products	34	3,178
Processing services	15	1,402
Other (interest)	<u>1</u>	<u>93</u>
	100%	\$9,347

- The majority of TCC's revenue is generated by professional services; i.e., custom programming, systems design and project management provided to individual life, health and annuity insurance companies.
- Thirty-five percent of TCC's revenue stems from the sale of an integrated set of software systems called CONTINUUM Systems (formerly LIFE/70). They constitute a totally integrated management information system encompassing home office and field administration as well as corporate planning for life insurance, health insurance and annuity operations. The major systems are:
  - Home Office Administration which includes New Business, Policy Administration, Premium Billing and Collection, Inquiry, Data Entry, General Accounting, Check Disbursement, Agency, Reinstatement Plan Values, Policy Exhibit, Valuation and Bond and Stock Components.
  - Corporate Forecasting System which interfaces with the Home Office Administration System to perform long-range corporate modeling.
  - Actuarial Planning System, including Gross Premium Planning, Adjusted Earnings and Sales Profit Analysis.

## COMPANY HIGHLIGHT/THE CONTINUUM COMPANY, INC.

- Introduced in 1970, CONTINUUM operates on any IBM System/360 or 370 running under the following operating systems: OS/MVS, OS/VS1, OS/VS2, OS/MVT, DOS, and DOS/VS.
  - There are 68 CONTINUUM systems installed.
- In July 1979, TCC expanded its software services to include Comprehensive User Product Services (CUPS). These services provide clients with maintenance, enhancements for new insurance products and future systems development. For the cost of approximately one systems professional, clients obtain approximately \$2.5 million worth of services annually. There were 42 CUPS subscribers in 1980 who generated over \$1 million in FY 1980 revenues.
- TCC also offers processing services. Its proprietary software is available for processing from its information processing center in Austin (TX).

**INDUSTRY MARKETS** One hundred percent of TCC's revenues are derived from insurance companies.

**GEOGRAPHIC MARKETS** TCC markets its services throughout the U. S., which accounts for 92% of its revenues. The remaining 8% of revenues stem from Canada and Mexico.

## COMPUTER HARDWARE AND SOFTWARE

- TCC operates one data center at its headquarters in Austin (TX). Installed are two IBM 370/158s running under OS and DOS. CICS and CMS are available.
- Its computers are accessed via AT&T LONG LINES.



## COMPANY PROFILE

---

### **CONTRACTORS MANAGEMENT SYSTEMS**

9320 Carmel Mountain Road  
Suite C  
San Diego, CA 92129  
(619) 484-7911

Scott Sloan, President  
Private Corporation  
Total Employees: 22  
Total Revenue, Fiscal Year End  
7/31/88: \$1,500,000\*

\*INPUT estimate

---

#### **The Company**

Contractors Management Systems (CMS) provides microcomputer software products for cost estimating and job scheduling to the construction industry.

CMS management states that the company is profitable and had "one of its best years in 1988." Growth rates were not available, however the total number of systems that the company has licensed has increased from 5,000 in 1986 to over 9,000 currently.

#### **Key Products and Services**

One hundred percent of CMS' fiscal 1988 revenue was derived from microcomputer software products targeted to the construction industry.

- The company offers the following products for IBM PC/XT, AT, PS/2 and compatible microcomputers:
  - Easyest is a cost estimating system based on line-item take-offs.
  - ESPRI, introduced in June 1986, is an advanced cost estimating system based on assembly take-offs.
  - MEASURE-MASTER is an electronic measurement system that supports digitizer or rolling measurements.
- CMS software products range from \$295 to \$5,000.

#### **Industry Markets**

One hundred percent of CMS' fiscal 1988 revenue was derived from the construction industry.

Clients range from smaller firms with annual revenue of \$100,000 to very large construction firms.

**Geographic  
Markets**

Ninety percent of CMS' revenue was derived from the U.S., 5% from Canada, and 5% from Europe.

Approximately 50% of revenue is from direct sales. The remaining 50% of revenue is derived from sales through approximately 20 distributors and over 6,000 dealers.

## COMPANY BRIEF

Primary Industry-Specific Market: Construction

### **Contractors Management Systems**

11150 Sunset Hills Road  
Suite 300  
Reston, VA 22090  
(703) 435-3172

CEO: Scott Sloan, President  
Private Company  
Founded: 1973

Employees: 22 (10/86)

Revenue (FYE 7/30/86): \$2 million\*, (FYE 7/30/85): \$1.5 million\*

-----

**The Company:** Provides microcomputer software products for cost estimating and job scheduling to the construction industry

### **Sources of Revenue:**

- Application Software (100%)

### **Key Products and Services:**

- Application Software Products (Utilizes IBM PC/XT, AT, and compatible micro-computers)
  - Easest Plus, a cost estimating system (based on line-item take-offs)
  - ESPRI Plus, introduced in June 1986, is an advanced cost estimating system (based on assembly take-offs)
  - Schedule Manager, a job scheduling system

### **Target Industries:**

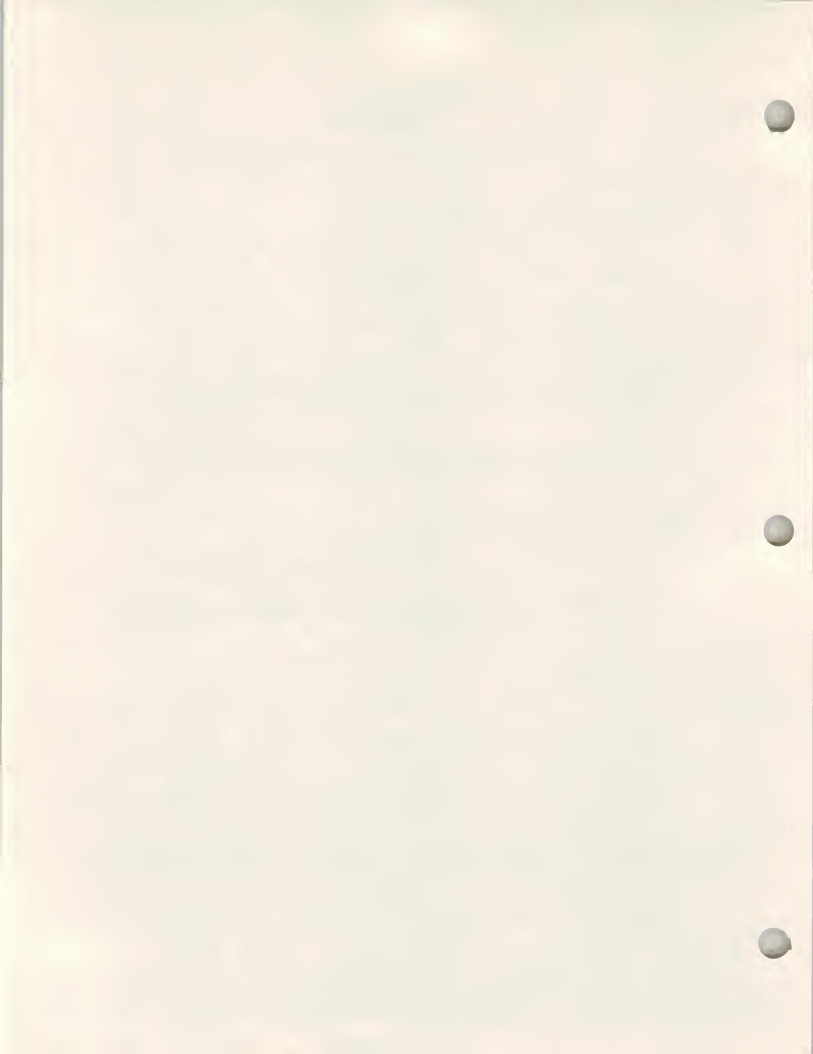
- Construction (100%)
- Clients range from firms with annual revenue of \$100,000 to very large construction firms
- Over 5,000 products have been sold

### **Geographic Markets:**

- U.S. (90%)
- Canada (5%)
- Europe (5%)
- Approximately 50% of revenue is from direct sales. The remaining 50% of revenue is derived from sales through approximately 20 distributors and over 6,000 dealers

\*Company estimate

October 1986



## COMPANY PROFILE

---

### **CONTROL DATA BUSINESS INFORMATION SERVICES**

500 West Putnam Avenue  
P.O. Box 7100  
Greenwich, CT 06836  
(203) 622-2000

James Smith, Vice President  
Business Unit of Control Data Corporation  
Total Employees: 250\*  
Total Revenue, Fiscal Year End  
12/31/88: \$35,000,000\*

\* INPUT estimate

---

### **The Company**

Control Data Business Information Services (BIS) currently provides decision support application software products and associated support services primarily to airlines, the hospitality industry, and the financial services/insurance industry.

- Over the past several years, BIS has redirected its primary business from providing remote computing services to clients across industries to focusing on decision support software to its targeted vertical markets.
- BIS currently operates as a business unit of Control Data Corporation (CDC) within CDC's Information Services Group, Data Services.

### **Key Products and Services**

The majority of BIS' 1988 revenue was derived from application software product licenses and support services. BIS also derives revenue from utility processing services.

BIS currently is actively marketing the following application software products:

- The Investment Management Information System, introduced in 1987, is designed to help investment management professionals improve yields on their portfolios. It integrates portfolio management and investment accounting functions that addresses all of the inventory, valuation, cashflow, and accounting needs of an organization active in the investment industry.
- Separate trade input screens simplify data entry for futures, stocks, bonds, options, money markets, repurchase agreements, mortgage-backed securities, and other investments. The system also generates accounting entries for general ledger functions and regulatory requirements.

The system enables users to transfer information to The Freedom Group to prepare Schedule D regulatory reports automatically.

- The system summarizes daily trade activities and compares them with relevant market data. It is linked automatically with CDC and other financial data bases to simplify functions such as investment pricing and evaluation of portfolio performance.
- As soon as a trade is entered, the system can report on the overall account position of the portfolio—including how much cash is available and what percentage is placed in each investment instrument.
- Modules include: Inventory, which captures and reports trade activity; Cashflow, which tracks and forecasts cash-related investment activity; Accounting, which handles all required calculations, postings, and regulatory reports for the activity entered in the Inventory and Cashflow modules; Valuation, which prices investments; and Operational Support, which helps maintain files on key information.
- The Investment Management Information System runs on IBM 30xx computers under MVS/XA and MVS/SP, VM. It is priced at \$311,000.
- Investment Management Information System clients include 11 major insurance companies. Insurance company clients include Fireman's Fund, The Hartford, Alexander Hamilton Life Insurance Company of America, and AMEV Holdings, Inc.
- OPTIX™, a product that has evolved since 1982, is BIS' yield management software system that helps airlines to maximize revenues while offering competitive discount fares.
- OPTIX monitors bookings on future flights, forecasts demand, uses advanced mathematical techniques to recommend optimum availabilities of discount fares, and provides numerous analyses and reports serving a variety of management needs.
- OPTIX is available for IBM and compatible mainframes and also supports PC access via standard micro-to-mainframe communications links.

- OPTIX ranges in price from \$450,000 to approximately \$1 million.
- Current clients include Thai Airways International, Midway Airlines, Malaysian Air Systems, Hawaiian Airlines, and Pan Am.
- BIS has also adapted OPTIX to the hospitality and car rental industries, with installations at five of the top seven U.S.-based hotel companies.
- Micro-OPTIX™, introduced in June 1988, is a microcomputer-based system incorporating many OPTIX features and designed for the special needs of regional and smaller international carriers.
  - Micro-OPTIX runs on IBM and compatible microcomputers and licenses for \$160,000 and up.
  - Current installations include Air Jamaica, Air Wisconsin, Aspen Airways, Midwest Express, Presidential Airways, and WestAir.
- X/ISSUE™, introduced in 1982, is a system for inputting, calculating, printing, voiding, and tracking certificates of deposit and commercial paper.
  - X/ISSUE allows multiple users to enter transactions and access information simultaneously and provides management reports based on the user's own definition and design.
  - X/ISSUE runs on IBM 30xx computers and remote computing environments under MVS/XA, MVS/SP. Prices start at \$125,000.
  - X/ISSUE is targeted to large financial institutions and Fortune 100 companies. Clients include Westinghouse, Chrysler, County National West, Bank of New York, and Irving Trust.
  - There are currently approximately 10 X/ISSUE installations.

BIS will provide enhancements for its software based on individual client requirements.

BIS continues to provide utility processing services to approximately 1,500 clients through its data center in Cleveland.

**Industry Markets**

INPUT estimates that approximately 70% of BIS' 1988 revenue was derived from the financial services industry, including insurance companies and banks. The remaining 30% of revenue was derived from airlines.

**Geographic Markets**

INPUT estimates approximately 90% of BIS' 1988 revenue was derived from the U.S. and 10% from international sources.

In addition to its headquarters in Greenwich (CT), BIS has offices across the country.

**Computer Hardware**

BIS' data center in Cleveland includes four IBM 3083 Js, one Amdahl 5880, and one IBM 9370.

## COMPANY PROFILE

### CONTROL DATA BUSINESS MANAGEMENT SERVICES

8100 34th Avenue South  
Bloomington, MN 55420  
(612) 853-8100

Patrick M. Delaney, President  
Division of Control Data Corporation  
Total Employees: 2,650\*  
Total Revenue, Fiscal Year End  
12/31/89: \$170,500,000

\* INPUT estimate

### The Company

Control Data's Business Management Services Division provides processing services and software products for payroll, tax filing, human resources management, and accounting applications to well over 30,000 organizations of all sizes nationwide.

- The division also provides medical, dental, and vision claims administration services for large companies that self-fund their benefit plans, and supplies an employee assistance program for a broad customer base.
- Business Management Services currently operates as a division of Control Data Corporation (CDC).

Business Management Services' 1989 revenue reached \$170.5 million, a 21% increase over 1988 of \$141.4 million. A three-year revenue summary follows:

#### CONTROL DATA BUSINESS MANAGEMENT SERVICES THREE-YEAR REVENUE SUMMARY (\$ millions)

ITEM	FISCAL YEAR		
	1989	1988	1987
Revenue	\$170.5	\$141.4	\$115.4
• Percent increase from previous year	21%	23%	N/A

CDC management attributes Business Management Services' revenue increases during the past three years to an expanded customer base and expanded and enhanced product offerings in its payroll processing, payroll tax filing, and benefit claims processing operations. Revenues in 1989 and, to a lesser degree, in 1988, also

benefitted from higher interest income due to increased amounts held on behalf of payroll tax filing customers and higher interest rates.

Business Management Services' primary competitor is Automatic Data Processing.

### **Key Products and Services**

The majority of Business Management Services' revenue is derived from business data payroll processing services. The remainder is derived from benefits claims services and employee assistance program.

Processing services offered by Business Management Services include the following:

- Signature™ Payroll Services include the following:
  - Basic services include issuing paychecks, completing electronic funds transfers, and meeting internal, government, and third-party reporting requirements, including labor and job cost reporting.
  - Reports can be defined from over 1,500 data elements on each employee; and magnetic media is available for wage and tax reporting.
  - Pay Analysis Reporting, a tool for analyzing and controlling payroll costs, provides payroll register flexibility.
  - Unlike other payroll services, Signature services include self-mailer checks--signed, sealed, and sorted in the sequence desired for easy distribution--plus all reports delivered at the same time as the paychecks.
- Signature™ Tax Filing Services include the preparation, filing, and deposit of all tax obligations, accurately and on time. Federal, state, and local tax information is captured automatically from Signature Payroll Services.
- Performance™ Accounts Receivable Services help speed collections, improve cash flow, and curtail abuses of a company's credit policies. In addition, check-free payment and collection is available via the electronic funds transfer capability.
- Performance Accounts Payable Services help manage cash flow, protect credit ratings, and take advantage of prompt

payment discounts. This service can be interfaced with the General Ledger System.

- The Performance General Ledger and Financial Reporting System allows the analysis of historical trends, budget comparisons, and projections. The system also provides a complete audit trail, with detailed general ledger and data base design for customized financial statement preparation.

Business Management Services also offers the following software products:

- Orchestrator<sup>®</sup> is a microcomputer-to-mainframe link that allows Business Management Services' processing services clients to enter payroll data via their microcomputers, then transmit the information to Business Management Services for processing.
  - Orchestrator also enables users to retrieve report and data files for ad hoc reporting or integration with popular software programs, including Lotus 1-2-3, Ashton-Tate's dBase, and Microsoft Word, as well as PC-to-PC for consolidating departmental or multilocation information.
  - An electronic timeclock interface to payroll is available through Orchestrator to facilitate automation from punch-in to paycheck.
  - Two other features of Orchestrator, Xpresscheck<sup>™</sup> and Xpressmaster<sup>™</sup>, enable customers to produce completely automated paychecks at their microcomputers--from calculating taxes and printing checks to updating the Signature payroll master files.
- The Repertoire<sup>™</sup> Human Resources Management System, introduced in 1985, is a microcomputer-based software product that integrates with Business Management Services' Signature Payroll processing service via Orchestrator to form a single data base of employee information for on-line inquiry and updating.
  - Using Repertoire, human resource departments can manage complex issues and administrative problems associated with executive compensation, position control, flexible benefits, employee stock option plans (ESOPs), training, applicant tracking, reimbursement, and compliance reporting for EEO, COBRA, and OSHA.

- The software can be customized without programming assistance and is operable in a local-area network environment.

Business Management Services contract examples include the following:

- In early 1990, Business Management Services was awarded contracts by Zoecon Corporation and Immanuel-St. Joseph Hospital to administer their health and vision care benefit plans.
- Payroll processing customers include Coast to Coast Stores, Microsoft, Inc., ComputerLand, Coca-Cola Bottling Company Consolidated, Colombo Yogurt, Hills Bros., Inc., Child World, Jefferson Pilot Communications, and Reebok International.
- Employee assistance program clients include Mead Corporation, Pepsi-Cola, Philip Morris, 7-11 Stores, Tandem Computers, and the Federal Aviation Administration.

**Industry Markets**

Business Management Services' clients come from a variety of industries, from small and medium-sized organizations, to multiple divisions of Fortune 500 companies.

**Geographic Markets**

One hundred percent of Business Management Services' revenue is derived from the U.S.

Business Management Services operates 36 regional sales offices nationwide.

**Computer Hardware**

Processing is performed at approximately 30 local data centers located across the U.S. The centers generally have IBM 9370 computers installed.

These data centers interface with a data center located in Cleveland that has five processors installed.

## COMPANY PROFILE

---

### **CONTROL DATA, BUSINESS MANAGEMENT SERVICES**

8100 34th Avenue South  
Bloomington, MN 55420  
(612) 853-8100

Patrick M. Delaney, President  
Division of Control Data Corporation  
Total Employees: 2,650\*  
Total Revenue, Fiscal Year End  
12/31/88: \$160,000,000\*

\* INPUT estimate

---

#### **The Company**

Control Data's Business Management Services Division, formerly known as Control Data Business Centers, provides processing services and software products for payroll, tax filing, human resources management, accounting, and benefits claims applications to well over 30,000 organizations of all sizes nationwide.

- Business Management Services operates as a division of Control Data Corporation (CDC) within CDC's Information Services Group.

INPUT estimates Business Management Services' 1988 revenue reached \$160 million, a 16% increase over 1987 revenue.

Business Management Services' primary competitor is Automatic Data Processing.

#### **Key Products and Services**

The majority of Business Management Services' revenue is derived from its payroll processing services. The remainder is derived from its other processing services and its software products.

Processing services offered by Business Management Services include the following:

- Signature<sup>TM</sup> Payroll Services include the following:
  - Basic services include issuing paychecks, completing electronic funds transfers, and meeting internal, government, and third-party reporting requirements, including labor and job cost reporting.
  - Reports can be defined from over 1,100 data elements on each employee; and magnetic media is available for wage and tax reporting.

- Unlike other payroll services, Signature services include self-mailer checks--signed, sealed, and sorted in the sequence desired for easy distribution--plus all reports delivered at the same time as the paychecks.
- Signature™ Tax Filing Services include the preparation, filing, and deposit of all tax obligations, accurately and on time. Federal, state, and local tax information is captured automatically from Signature Payroll Services.
- Performance™ Accounts Receivable Services help speed collections, improve cash flow, and curtail abuses of a company's credit policies. In addition, check-free payment and collection is available via the electronic funds transfer capability.
- Performance Accounts Payable Services help manage cash flow, protect credit ratings, and take advantage of prompt payment discounts. This service can be interfaced with the General Ledger System.
- The Performance General Ledger and Financial Reporting System allows the analysis of historical trends, budget comparisons, and projections. The system also provides a complete audit trail, with detailed general ledger and data base design for customized financial statement preparation.

Business Management Services also offers the following software products:

- Orchestrator<sup>R</sup> is a microcomputer-to-mainframe link that allows Business Management Services' processing services clients to enter payroll data via their microcomputers, then transmit the information to Business Management Services for processing.
- Orchestrator also enables users to retrieve report and data files for ad hoc reporting or integration with popular software programs, including Lotus 1-2-3, Ashton-Tate's dBase, and Micropro's Wordstar, as well as PC-to-PC for consolidating departmental or multi-location information.
- An electronic timeclock interface to payroll is available through Orchestrator to facilitate automation from punch-in to paycheck.

- The Repertoire™ Human Resources Management System, introduced in 1985, is a microcomputer-based software product that integrates with Business Management Services' Signature Payroll processing service via Orchestrator to form a single data base of employee information for on-line inquiry and updating.
- Using Repertoire, human resource departments can manage complex issues and administrative problems associated with executive compensation, position control, flexible benefits, employee stock option plans (ESOPs), training, reimbursement, and compliance reporting for Section 89, COBRA, and OSHA.
- The software can be customized without programming assistance and is operable in a local area network environment.

Business Management Services contract examples include the following:

- During mid-1989, The Washington State Employee Benefit Board awarded a multi-year contract renewal to Business Management Services. Under the agreement, Business Management Services will administer health and vision care benefits plans for approximately 45,000 state government employees and retirees.
- In early 1989, Business Management Services was awarded major payroll processing contracts by Reebok International and Villanova University.
- Other customers include Coast to Coast Stores, Microsoft, Inc., Computerland, and Coca-Cola Bottling Company Consolidated.

### **Industry Markets**

Business Management Services' clients come from a variety of industries, from small and medium-sized organizations, to multiple divisions of Fortune 500 companies.

### **Geographic Markets**

One hundred percent of Business Management Services' revenue is derived from the U.S.

Business Management Services operates 42 regional sales and service offices nationwide.

**Computer  
Hardware**

Processing is performed at approximately 30 local data centers located across the U.S. These centers generally have IBM 9370 computers installed.

These data centers interface with a data center located in Cleveland that has five processors installed.

## SUPPLEMENT TO CONTROL DATA CORPORATION PROFILE

### CONTROL DATA BUSINESS SERVICES GROUP

8100 34th Avenue South  
Minneapolis, MN 55440  
(612) 853-8100

D. P. White, President  
Operating Group of Control Data  
Corporation

---

### THE COMPANY

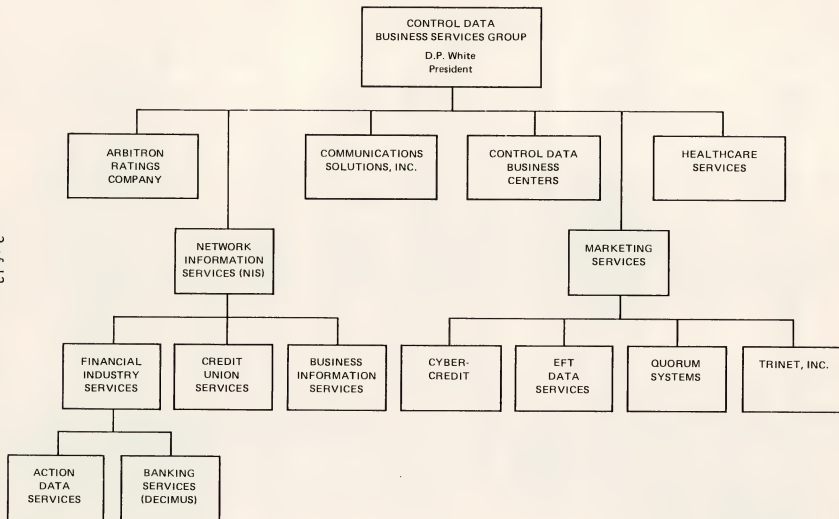
- The Control Data Business Services Group (BSG), established during 1984, provides processing services, software products, and turnkey systems to over 20,000 clients nationwide. Target markets for BSG's products and services include clients in broadcasting, banking and financial services, manufacturing, and legal services, as well as Fortune 1000 companies and small businesses.
- BSG's current operations are conducted through several marketing units, as shown in Exhibit A. Recent changes to the group include the following:
  - Quorum Systems was formed by Control Data in April 1985 to provide processing and litigation support services for the legal profession.
    - Quorum Systems combines the operations of Comput-R-Systems Inc., acquired by Control Data in late 1984, and Legal Support Services, a Control Data organization specializing in litigation support services.
  - Communications Solutions, Inc. (CSI) was acquired by Control Data in 1984 from VisiCorp. CSI currently provides IBM-compatible terminal emulation and office automation software products and associated support services.
  - In July 1985 Control Data sold Brokerage Transaction Services, Inc. (BTSI) to Automatic Data Processing. BTSI provided back office transaction processing and recordkeeping services and, until its sale, operated within BSG.

### KEY PRODUCTS AND SERVICES

- The majority of BSG's 1985 revenue was derived from processing services. The remainder was derived from software products and turnkey systems.
- Arbitron Ratings Company provides broadcast audience measurement services. Headquartered in New York, Arbitron operates two data centers in Rockville and Beltsville (MD) that collect, analyze, and prepare reports on the viewing and listening habits of the general public.

# EXHIBIT A

## ORGANIZATION CHART



CONTROL DATA BUSINESS SERVICES GROUP

- Audience measurement services are provided to more than 6,000 clients. Included are 600 television stations, 1,900 radio broadcasters, and over 3,500 advertisers and agencies.
- Arbitron's field staff of more than 3,000 contacts about 2.5 million households annually to obtain television-viewing and radio-listening information.
- Data on viewing and listening habits are collected through diaries and, for some television audiences, through metering devices.
- Arbitron metering services are available in 11 markets--New York, Chicago, Los Angeles, San Francisco, Philadelphia, Boston, Detroit, Dallas-Ft. Worth, Washington, D.C., Houston, and Miami. There are 350 to 500 meters installed in each city.
- Arbitron provides information on the demographics and lifestyles of a television or radio audience in a market by merging its audience data with ClusterPlus<sup>SM</sup> --a lifestyle segmentation system developed by Donnelly Marketing Systems. ClusterPlus describes the lifestyle characteristics of the people who live in a particular Zip Code. Each description is called a lifestyle cluster and is a measure of hundreds of variables like age, sex, income, occupation, family size, and mobility. The clusters describe the kinds of consumers the residents of particular Zip Codes in a market represent.
- Arbitron also merges its information with Simmons Market Research Bureau Product User Profiles. Simmons conducts surveys of product preferences by consumers. The profiles of product users are matched to the appropriate ClusterPlus lifestyle clusters to show buying tendencies among the different lifestyle groups in a radio or television audience.
- ScanAmerica, announced in 1984, is a syndicated research service using electronic technology to measure television viewing and product purchasing within the same household.
  - The ScanAmerica electronic meter monitors television viewing in detail: the age and sex of everyone watching; the channel, broadcast or cable being watched; the exact time and length of viewing; and the use of VCRs or home computers with the television set.
  - ScanAmerica uses a portable in-home scanner to track products brought into the household by recording the products' Universal Product Codes. The television viewing and product information is stored by the meter, transferred to the main computers for processing and is used to produce reports for advertisers and broadcasters. ScanAmerica technology is currently engaged in a pilot study of 200 households in Denver. Based on the resulting

## CONTROL DATA BUSINESS SERVICES GROUP

data, the Denver service will be expanded the end of 1986 to between 600-1,000 households to produce syndicated reports for use by broadcaster, advertisers, and agencies.

- Arbitron Ratings Company has twin CDC 3500s and seven CYBER 120s in Beltsville and uses two CDC CYBER 760s and one CYBER 730 in the Cybernet Center in Rockville.
- Control Data Business Centers (CDBC) provides batch and remote batch processing services and software products to well over 12,000 small- and medium-sized businesses.
  - Applications available through processing services include:
    - Payroll 4.
    - Payroll Tax Filing.
    - Human Resource Management System.
    - Job Cost Analysis.
    - Labor/Performance Analysis.
    - Accounts Payable.
    - Accounts Receivable.
    - Sales Analysis.
    - General Ledger and Financial Reporting.
  - CDBC markets Orchestrator<sup>TM</sup>, a software product designed for IBM PC and compatible microcomputers, that links CDBC's mainframe computers with a client's in-house desktop computer. Orchestrator licenses for \$3,600, with a monthly maintenance fee of \$35.
  - CDBC clients come from a variety of industries with the heaviest concentration of service to mid-sized companies with \$500,000 to \$50 million in revenue and with 50 to 5,000 employees.
  - CDBC operates approximately 36 sales offices nationwide. Processing is performed at data centers in Cleveland and 30 local processing centers.
- Business Information Services (BIS), a marketing group within Network Information Services, provides remote computing and distributed processing services from its data center in Cleveland.
  - Application emphasis has shifted to "Management Application Systems" characterized by:
    - Multiple users, often in different locations.
    - Multiple data bases, combined and/or shared between departments.
    - Use of outside data, integrated with in-house data.
    - "Seed Modules" of software, which may be used as is but are designed to be tailored to meet unique local conditions.
    - Inter-related, integrated applications.

## CONTROL DATA BUSINESS SERVICES GROUP

- Examples of Management Application Systems include:
  - MARKSMAN, a marketing system that facilitates day-to-day operation and planning in areas like advertising, promotion, annual planning, sales forecasting, profit and loss planning, market research, territory operations, customer relations, and sales management.
  - ACTIVATOR, a process manufacturing system that includes modules for: Performance Analysis, Yield Management, Operations Scheduling, Financial Management, Lot Tracing, Process Costing, Capacity Planning, Resource Planning, Material Management, and Distribution Planning.
  - TREASURY COMMAND, a financial management system that facilitates the day-to-day operation of the corporate treasury management function in areas such as cash management, bank balance reporting, deposit reporting, bank relationship management, debt and investment portfolio management, cash forecasting, commercial paper issuance, and corporate trade payments. The system also provides links to in-house accounting and general ledger systems for complete integration.
- In former years, all processing was done remotely at the BIS data center. The division has since expanded its offerings to "process where it makes the most sense." For example, the Control Data Distributed Service makes the Management Applications Systems available on a Wang VS/100 or on IBM 43XX located at the customer site. Similarly, various links allow the integration of popular micro-software packages, such as Lotus 1-2-3 or Control Data's Visi On<sup>TM</sup> applications. This provides flexibility in accessing and transferring data and in moving workloads to the appropriate resource—micro workstations, in-house mainframes, departmental minis, or the BIS Cleveland system.
- The BIS PLATO Instruction Series provides customer training through a combination of video, on-line, and microcomputer lessons. This provides for uniform customer education, independent of geographic location or schedule requirements.
- A range of data bases covering financial, economic, and marketing data continue to be available to be integrated with the Management Application Systems.
- BIS's worldwide data services network continues to be enhanced. It reaches all major cities in the U.S., Canada, Europe, Australia, and the Far East.
- A profile of the applications offered on the BIS network is presented in Exhibit B.

# CONTROL DATA BUSINESS SERVICES GROUP

## EXHIBIT B

### BUSINESS INFORMATION SERVICES NETWORK PROFILE

APPLICATION/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT               <ul style="list-style-type: none"> <li>— REMOTE SERVICE                   <ul style="list-style-type: none"> <li>• IBM 303X, CALL/370, CALL/PLUS</li> </ul> </li> <li>— DISTRIBUTED SERVICE                   <ul style="list-style-type: none"> <li>• IBM 4361</li> <li>• IBM 4381</li> <li>• WANG VS 100</li> <li>• VM</li> </ul> </li> <li>— PROGRAM PRODUCT                   <ul style="list-style-type: none"> <li>• MVS/TSO</li> </ul> </li> </ul> </li> <li>• PROGRAMMING LANGUAGES               <ul style="list-style-type: none"> <li>— CALL PLUS      — CALL 370                   <ul style="list-style-type: none"> <li>• IBM ASSEMBLY    • BASIC</li> <li>• VS BASIC          • FORTRAN</li> <li>• COBOL            • G FORTRAN</li> <li>• VS COBOL        • PL/1</li> <li>• FORTRAN</li> <li>• PL/1</li> <li>• RPG</li> <li>• VS APL</li> </ul> </li> </ul> </li> <li>• DATA MANAGEMENT               <ul style="list-style-type: none"> <li>— X/L</li> <li>— EASYTRIEVE</li> <li>— MARK IV</li> </ul> </li> <li>• DATA BASES               <ul style="list-style-type: none"> <li>— AMERICAN PROFILE</li> <li>— EURABANK, EURARATE</li> <li>— FED RESERVE Y9 BANK HOLDING</li> <li>— FINANCIAL INSTITUTION DATA BASE: FDIC, FS LIC, NCUA</li> <li>— FINEC</li> <li>— GINNIE MAE DATA BASE</li> <li>— HCMS</li> <li>— INSURANCE INDUSTRY DATA</li> <li>— MISTI AND MUNIPRICE</li> <li>— X/DISCLOSURE</li> <li>— X/FINDRS</li> <li>— X/MARKET</li> <li>— X/REGION</li> </ul> </li> <li>• CROSS INDUSTRY APPLICATIONS               <ul style="list-style-type: none"> <li>— PLANNING/MODELING (PROPHIT II)</li> <li>— TIME SERIES (TIMEPACK)</li> <li>— RISK ANALYSIS (RISKAN II)</li> <li>— PLOTTING-GRAPHICS (PICTURE PAC)</li> <li>— STATISTICAL ANALYSIS (DATA PACK, SAS, APL STATISTICAL LIBRARY)</li> </ul> </li> </ul>

APPLICATION/PRODUCT NAME
<ul style="list-style-type: none"> <li>• MARKETING               <ul style="list-style-type: none"> <li>— MARKSMAN</li> </ul> </li> <li>• BANKING/FINANCE               <ul style="list-style-type: none"> <li>— CORPORATE PLANNING</li> <li>— MONEY MARKET TRADING</li> <li>— TRUST AND ESTATE PLANNING</li> <li>— ASSET/LIABILITY MANAGEMENT</li> <li>— PERSONAL FINANCIAL PLANNING</li> <li>— CASH MANAGEMENT</li> <li>— PORTFOLIO MANAGEMENT</li> <li>— TREASURY COMMAND</li> </ul> </li> <li>• MANUFACTURING /DISTRIBUTION               <ul style="list-style-type: none"> <li>— BUSINESS PLANNING AND COST CONTROL</li> <li>— CAPACITY REQUIREMENTS PLANNING</li> <li>— MASTER SCHEDULING</li> <li>— ORDER ENTRY AND CONFIRMATION</li> <li>— MATERIAL REQUIREMENTS PLANNING</li> <li>— INVENTORY/PURCHASING CONTROL</li> <li>— SHOP FLOOR CONTROL</li> <li>— ACTIVATOR</li> </ul> </li> <li>• HEALTH CARE               <ul style="list-style-type: none"> <li>— FINANCIAL PLANNING</li> <li>— COST ALLOCATION</li> <li>— CASH FLOW PROJECTION/ANALYSIS</li> <li>— DEMOGRAPHIC/SERVICE AREA ANALYSIS</li> <li>— MEDICARE WORKSHEET PREPARATION</li> <li>— PERSONNEL UTILIZATION</li> <li>— RISK MANAGEMENT REPORTING</li> </ul> </li> <li>• GOVERNMENT               <ul style="list-style-type: none"> <li>— FEDERAL BUDGET ANALYSIS</li> <li>— STATE HUMAN RESOURCE MANAGEMENT</li> <li>— EXPENSE AND REVENUE PLANNING</li> <li>— STATE TAX TRACKING</li> <li>— WELFARE CASELOAD FORECASTING</li> </ul> </li> </ul>

## CONTROL DATA BUSINESS SERVICES GROUP

- Financial Services groups within Business Services include Credit Union Services, EFT Data Services, Banking Services, ACTION Data Services, and CYBERCREDIT services.
  - Credit Union Services provides processing services and turnkey systems to over 1,500 credit unions in the U.S.
    - Credit union services are marketed through six service options:
      - FOCUS II, a batch service.
      - OCUS, a special batch service available only in Ohio.
      - FOCUS 300, an on-line service offered with fewer functions and at a reduced cost for smaller credit unions.
      - FOCUS IV, an on-line service offered at a reduced price when used during nonprime time.
      - FOCUS On-Line, the complete on-line version with no price reductions.
      - FOCUS ONE, a standalone in-house computer system for use in large credit unions.
    - Approximately 800 credit unions use the FOCUS and OCUS batch services, and 600 are on-line users. All on-line services are provided from a data center in Campbell (CA). Batch services are provided from data centers now under the CDC Business Center organization.
    - Applications available in the on-line version of FOCUS are:
      - Share draft and loan draft processing.
      - Automated share and loan postings.
      - Certificate processing.
      - General ledger and financial reporting services.
      - Check preparation.
      - Delinquency notices and management reports.
      - EFTS funds deposit.
      - VISA credit card support.
    - FOCUS ONE, the standalone in-house computer system, has been installed in about 100 credit unions since it was introduced in 1980.
      - FOCUS ONE operates on an IBM Series I and ranges in price from \$140,000 to \$1.1 million depending on software and peripherals required.
      - All application software available on the on-line service is offered on FOCUS ONE plus on-line ATM, audio response, and integrated credit card systems.

## CONTROL DATA BUSINESS SERVICES GROUP

- . Credit Union Services also markets a Distributed Data Processing (DDP) system using a Data General MP 100 system in conjunction with its on-line service.
- EFT Data Services, based in Greenwich (CT), provides payment authorization services to commercial banks which, in turn, market the service to retail merchants.
  - . EFT's TeleMoney Service enables commercial banks to provide point-of-sale check verification, check guarantee, and credit card authorization services.
  - . Retail outlets are connected via terminals or direct links to the TeleMoney on-line transaction system.
  - . Mail order providers have the ability to access the TeleMoney application via a Dial Batch service.
  - . EFT Data Services currently has over 35 commercial bank and bank associate clients.
- Banking Services provides fundamental application accounting processing services to financial institutions from data centers in Los Angeles, San Francisco, and Cleveland.
  - . Applications available include:
    - Commercial Loans.
    - Demand Deposit.
    - Customer Information File.
    - Savings/Time Deposit.
    - Installment Loans.
    - Real Estate.
    - ATM.
- ACTION Data Services, based in St. Louis, provides on-line, real-time data processing services to the financial services industry. ACTION currently provides services to over 115 customers who operate over 1,800 offices throughout the U.S. and Canada.
  - . ACTION offers services and support products for processing consumer loans, revolving lines of credit, certificates of deposit, savings accounts, and commercial loans.
  - . On-line capabilities include:
    - Calculation of interest, service charges, APR, insurance premiums, payment schedules.
    - Document preparation for loan and thrift accounts.
    - Loan disbursements/check writing.

## CONTROL DATA BUSINESS SERVICES GROUP

- Credit scoring calculations/demographic data capture.
- Variable rate support provided for all products.
- Payment processing/calculations and history records.
- Refund calculations - interest, insurance, etc.
- Cashier/teller balancing/totals.
- Comprehensive on-line reporting.
- . A number of features and reports are available to support each service including off-line reporting.
- . ACTION Data Services also supports Distributed Data Processing and provides a credit collection system for DDP systems.
- CYBERCREDIT II is a debt collection system marketed to financial and retail organizations. It is provided both in a turnkey system and as add-on software. This software is offered on DEC VAX and Micro VAX computers. A software-only version for IBM computers is anticipated for 1986-1987.
  - . CYBERCREDIT II capabilities include:
    - On-line tracking of delinquent account portfolios and collection activity to date.
    - Automated scheduling of collection contacts and follow-up.
    - Collector controlled personalized letter generation.
    - Support of multiple products and organizations on one system.
    - Management reports that provide information about the portfolio and collector productivity.
  - . CYBERCREDIT II software license fees range from \$50,000 to \$190,000.
  - . There are currently over 25 organizations using CYBERCREDIT.
- Communications Solutions, Inc. (CSI), headquartered in San Jose (CA), provides a range of IBM-compatible communications software that is designed to provide computer, workstation, and network vendors with interfaces to IBM mainframes and workstations.
  - Products include:
    - . SNA Cluster Controller Emulators: Access/SNA 3270, Access/SNA 3770.
    - . BSC Terminal Emulator: Access/BSC 3270.
    - . APPC/DIA Emulators: Access/SNA APPC, Access/DIA.
  - CSI also provides SNA training seminars, SNA newsletters and technical reports, and consulting and design services.
  - CSI products are currently used by over 70 customers.

## CONTROL DATA BUSINESS SERVICES GROUP

- Quorum Systems, based in Plymouth Meeting (PA), provides processing services, software products, and turnkey systems to over 300 law firms and corporate legal departments for timekeeping and billing, word processing, and litigation support.
  - Timekeeping and billing services and systems include:
    - The Service Bureau Management System, a remote batch processing service.
    - The On-Line Timekeeping and Billing Service, an interactive processing service.
    - Management Program 1500 (MP 1500) software, designed to run on DEC VAX computers, is used to track timekeeping and client accounting functions and produce various management reports. The software is priced from \$40,000.
    - Management Program 2000 (MP 2000) software offers expanded capabilities through its use of relational data base technology and is designed for use on DEC VAX computers. MP 2000 is priced from \$70,000 to \$500,000.
    - General Ledger, Accounts Payable, Docket Control, and Conflict Checking software modules are available as options for use with MP 1500 and MP 2000.
  - Word processing software includes:
    - WORD-II, running on DEC PDP-11 computers.
    - MASS-II, running on DEC VAX computers and various IBM PC-compatible microcomputers.
  - Litigation support services and products include:
    - PALLAS, a litigation support processing service.
    - BASIS, a litigation support software product for CDC CYBER, DEC VAX, IBM, and Prime computers. BASIS is priced from \$30,000.
    - INMAGIC<sup>T.M.</sup>, a litigation support software product for DEC Rainbow, PDP-11, and VAX computers and IBM PCs. INMAGIC pricing starts at \$8,000.
- Trinet, Inc., headquartered in Parsippany (NJ), provides data bases services relating to business information and provides telemarketing services.

## CONTROL DATA BUSINESS SERVICES GROUP

- Trinet maintains a data base of information on over 500 U.S. business establishments. In addition to data elements tailored to specific industries, the data base contains:
  - . Establishment name, address, telephone number.
  - . Nature of ownership.
  - . SIC code.
  - . Number of employees.
  - . Sales volume.
  - . Importance according to sales volume.
  - . Corporate linkages.
- The data base information is available on diskettes; tapes; via standard reports including Market Share History, Line of Business, and Geographic Sales; via custom reports; and on-line through Dialog, Data Resources, and Control Data's Business Information Services.
- Trinet Telemarketing provides initial needs assessment; market analysis and identification; script development; communicator training; pilot testing; program implementation; fulfillment; program tracking, analysis and recommendations in support of customer telemarketing needs.
- Trinet currently provides services to over 1,000 clients worldwide.
- The Healthcare Services Group, headquartered in Minneapolis, provides medical application software and turnkey systems to over 200 clients.
  - medTEC, introduced in 1982, is an on-line interactive medical information processing system for outpatient healthcare providers.
    - . Functions include accounts receivable, accounts payable, patient registration, record tracking, general ledger, appointment scheduling, and management reporting.
    - . medTEC is available to clients as a processing service from Healthcare Services' data center in Cleveland, or as a software product running on IBM 4300 computers.
    - . There are currently over 50 medTEC clients.
  - The HELP Medical Information & Logic System, introduced in 1984, is a hospital information system that integrates data from all hospital departments into a central data base.
    - . The HELP System is available to clients as a software product running on Tandem computers.
    - . HELP departmental subsystems include Admissions, Special Care Units, Radiology, Pulmonary/Blood Gas, Cath Laboratory,

## CONTROL DATA BUSINESS SERVICES GROUP

Dietary, Nursing, Pharmacy, Medical Records, Operating Room & Anesthesiology, Laboratory, Clinic Scheduling, Operating Room Scheduling, and Hospital Reporting.

- . There are currently six HELP System installations.
- PATHLAB III, introduced in 1983, is a laboratory system that interfaces with laboratory instruments and personnel to provide patient test reports, management reports, and long-term record storage and retrieval.
  - . PATHLAB III is provided as a turnkey system based on the Control Data CYBER 120 computer.
  - . Networking capabilities permit the interconnection of up to 15 CYBER 120 processors.
  - . Software modules available with PATHLAB III include:
    - Admission, Discharge, and Transfer.
    - Test Order Entry.
    - Specimen Reception.
    - Worklist.
    - Results Entry.
    - Patient Results Reporting.
    - Management-related functions.
    - Inquiry.
  - . PATHLAB III system prices range from \$350,000 to \$1 million. There are currently over 145 PATHLAB III systems installed.
- Other healthcare services include claims processing.

### INDUSTRY MARKETS

- Primary industry markets served by BSG include the broadcasting, banking and finance, manufacturing, legal, and marketing services industries. BSG has clients in virtually every industry market.

### COMPUTER HARDWARE

- Arbitron Ratings Company has twin CDC 3500s and seven CYBER 120s in Beltsville and uses two CDC CYBER 760s and one CYBER 730 in the CYBERNET Center in Rockville.
- Control Data Business Centers uses two IBM 370/156s and six IBM 3032s from Control Data Shared Network Services.
- Business Information Services' data center in Cleveland includes one IBM 4361, two IBM 3032s, five IBM 3033s, one CDC Omega II, and one Wang VS 100.

## CONTROL DATA BUSINESS SERVICES GROUP

- Credit Union Services has two IBM 3031s and two IBM 3033s as backup in Campbell (CA) for on-line processing. Batch services use IBM 4300 Series computers located in 24 branch offices.
- EFT Data Services uses the Business Information Services' computers located in Cleveland.
- Banking Services has five IBM 370/158 computers and one ATM Switch, dual HP 1000s installed in Los Angeles.
- ACTION Data Services has one IBM 370/158 and two IBM 4341 II computers installed in St. Louis.
- Quorum Systems provides litigation support processing services via CDC's worldwide network. Timekeeping and billing services are processed on a Univac 9080 located in Plymouth Meeting (PA).



## SUPPLEMENT TO CONTROL DATA CORPORATION PROFILE

**CONTROL DATA COMPUTER SYSTEMS  
AND SERVICES GROUP**  
8100 34th Avenue South  
P.O. Box 0  
Minneapolis, MN 55440  
(612) 853-4013

L. E. Jodsaas, President  
Operating Group of Control Data  
Corporation

---

### THE COMPANY

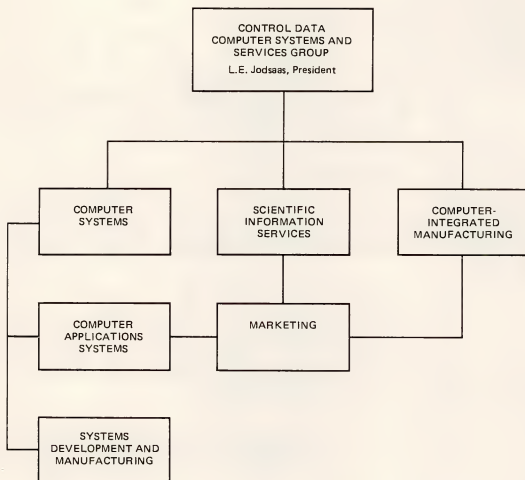
- Control Data Computer Systems and Services Group, established during 1985, provides computer systems, processing services, software products, turnkey systems, and associated support services through three operating units, as shown in Exhibit A.

### KEY PRODUCTS AND SERVICES

- The Computer Applications Systems unit within the Computer Systems group markets the CYBER 180 line of six upwardly compatible computers, from a supermini-class machine (180-810) to a powerful mainframe system (180-990).
  - Target markets include manufacturing, higher education, government, petroleum, and electric utilities.
  - In higher education, Control Data offers PLATO courseware in computer literacy, computer science, foreign language, math, science, farming, and other special topics. Also available are authoring systems to tailor computer-based courses to specific needs. (Note: PLATO courseware for K-12 and for business and industry is marketed through other operating groups.)
  - CYBER systems are also used in the petroleum and chemical industries, particularly for oil exploration and seismic processing. The CYBER-EPIC software system, which runs on the 180 series, includes modules for:
    - Well log analysis.
    - Synthetic seismograms.
    - Two-dimensional modeling.
    - Seismic data interpretation.
    - Graphic display and utilities.
    - Mapping.
    - Contouring.
    - Well log data base.

CONTROL DATA COMPUTER SYSTEMS AND SERVICES GROUP

EXHIBIT A



## CONTROL DATA COMPUTER SYSTEMS AND SERVICES GROUP

- In the utility industry, CYBER 180 computers are used to control the distribution of electricity. CDC management states that 27% of the U.S. generating capacity is controlled by Control Data Energy Management Systems based on installed and under-contract business.
- Two examples of Control Data's expanded marketing programs are the Value-Added Remarketer (VAR) and Independent Software Vendor (ISV) programs.
  - The VAR program allows companies to add application value to the CYBER 180 line by combining enhanced software with specially configured CYBER systems for resale to targeted market niches. An example is Digicon, a supplier of seismic processing applications for the petroleum industry. In September 1985 Digicon announced it will market its DISCO seismic processing software with CYBER 180 systems as a VAR.
  - The ISV program expands the application base for the CYBER 180 series by establishing business relationships with applications vendors in a variety of specific market and cross-discipline areas. Recent ISVs highlight structural analysis, graphics, and office automation applications for Control Data's NOS/VE operating system.
- More than 500 applications are available on Control Data computers. In 1986, Control Data will introduce applications to meet a variety of specific market needs. These include structural analysis, statistics, data management, graphics, simulation, and math/science applications.
- The Scientific Information Systems division was formed in late 1985 with the merging of CDC's UIS Company and CYBERNET Services (U.S.) operations.
- UIS Company (formerly United Information Services) was acquired from United Telecommunications, Inc. by Control Data in January 1984. Headquartered in Overland Park (KS), the former UIS unit provides remote computing services throughout the U.S.
  - Four separate processing services are offered. A sampling of available applications is shown in Exhibit B.
    - The APEX Service provides interactive and remote batch processing. The applications program library contains more than 300 programs addressing the needs of the energy, telephone, and manufacturing industries, and engineering, financial, commercial, and graphics applications.
    - SUPRA is a CRAY-I-based remote batch processing service with interactive utility management and manipulation capabilities. SUPRA's applications are targeted to

## EXHIBIT B

## SIS NETWORK PROFILE

## APEX AND SUPRA SERVICES

APEX SERVICE APPLICATION AREA/PRODUCT NAME		
• OPERATING ENVIRONMENT		
– 1 CDC CYBER 730	– APEX	
– 1 CDC CYBER 174		
– 2 CDC CYBER 175s		
• PROGRAMMING LANGUAGES AND EDITORS		
– APL	– COMPASS	
– BASIC	– FORTRAN	
– SUPER BASIC	– PASCAL	
– COBOL	– UNEDIT	
– XEDIT		
• DATA MANAGEMENT		
– IFM	– SYSTEM 2000	
– INFORM		
• GRAPHICS		
– CPS-1	– UNICHART	
– DISSPLA	– UNIDRAW	
– PLOT REQUEST	– UNIGRAF	
– TEMPLATE		
• MANUFACTURING/INDUSTRIAL		
– STEM	– SAC	– STARDYNE
– TRIFLANGE	– ADAMS	– SMUG
– TRITHERM	– DRAM	– ACSL
– TRIVESSEL	– CUTSII	– GPSS
– VESSEL	– UCSAPT	– SIMSCRIPT
– WERCO	– KCT	– Q-GERT
– AIRFLOW	– ANSYS	– IMSL
– SCIENCES	– ARI/RANDOM	– PROSE
– FLONET	– KSHL	– SPSS
– PIPENET	– MSC/NASTRAN	
• CONSTRUCTION/DESIGN		
– CNCGRD	– WERCO	– SLOPE-II
– DESIGNS	– VESSEL	– PILAY
– FLOOR	– ADLPIPE	– FLONET
– POSTEN	– EZFLEX	– WATERX/
– SYSPRO	– PIPENET	– ECON 2
– ANSYS	– DIS	– HEC
– TABS 80	– TRIMC	– CPS-1
– SMUG	– PIPENET	– ESC/COGO
– PCES 2	– WAVENET	– SDL/SDG
– TRIME	– ENERGARD	– SECS
– MEDS1	– FCHART	– RAYTHR
– STEM	– SOLCOST	– NOISE
– TRIFLANGE	– BDS	– DIS
– TRIVESSEL	– EARTHWORK	– PREP
• PETRO CHEMICAL		
– VARIOUS THIRD-PARTY SOFTWARE		

SUPRA SERVICE APPLICATION AREA/PRODUCT NAME		
• OPERATING ENVIRONMENT		
– 1 CRAY-1 MODEL S/2000, COS		
• PROGRAMMING LANGUAGES		
– CRAY FORTRAN (CFT)		
– CRAY ASSEMBLY LANGUAGE (CAL)		
• GRAPHICS		
– DISSPLA	– RMSSHIGH	
• MANUFACTURING/INDUSTRIAL		
– DRCPPIPE	– EAL	
– SIMFLEX-II	– MAGNA	
– ADINAT	– MARC	
– KPIPE	– MSC/NASTRAN	
– PHOENICS	– NISA	
– SINDA	– PISCES	
– TMG	– SAP 4	
– ADINA	– STARDYNE	
– ANSYS	– COSMIC/NASTRAN	
– ARI/RANDOM	– GAUSSIAN 82	
– ASTRO/MOVE	– IMSL	
– COSMOS	– LINPACK	
• CONSTRUCTION/DESIGN		
– SPACE V	– STARDYNE	– PIPLIN
– STAAD III	– COSMIC/	– PIPSUP
– ADINA	– NASTRAN	– CLASSI
– ANSYS	– PISCES	– FLUSH
– COSMOS	– ADINAP	– KPIPE
– MARC	– DRCPPIPE	– DAMBRK
– MSC/NASTRAN	– PIPANL	– DWAVE
– NISA	– NUPIPE II	– CPS-1
– SACS	– PIPESD	– CANDE
– SAP4	– SIMPLEX	
	– TRIFLEX	
• PETRO PRODUCTS (THIRD PARTY)		
– VIP	– ABAQUS	
– ECLIPSE	– PROCESS	
– BSS	– HEXTRAN	
– PIPEPHASE	– VLE/REGRESS	
– SACS	– PIPEPHASE	
– ULTRA/OSCAR		

# CONTROL DATA COMPUTER SYSTEMS AND SERVICES GROUP

## EXHIBIT B (Cont.)

### SIS NETWORK PROFILE

#### CENTRA AND DEC-10 SERVICES

CENTRA SERVICE APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT                     <ul style="list-style-type: none"> <li>- 2 IBM 3083 B*, VM AND MVS</li> <li>- CMS, CMS BATCH, TSO</li> <li>- SIMWARE</li> <li>- TMS</li> <li>- VM CENTER</li> </ul> </li> <li>• PROGRAMMING LANGUAGES AND EDITORS                     <ul style="list-style-type: none"> <li>- ASSEMBLER F &amp; H</li> <li>- COBOL INTERACTIVE DEBUG</li> <li>- FORTRAN G1</li> <li>- FORTRAN H</li> <li>- ISPF</li> <li>- OS/VS COBOL</li> <li>- OS/VS RPG II (MVS ONLY)</li> <li>- PASCAL/VS</li> <li>- PL/1 CHECKOUT</li> <li>- PL/1 OPTIMIZING</li> <li>- VS APL (VM ONLY)</li> <li>- VS BASIC</li> <li>- VS FORTRAN</li> </ul> </li> <li>• DATA MANAGEMENT AND DSS                     <ul style="list-style-type: none"> <li>- EASYTRIEVE PLUS - SAS/ETS</li> <li>- FOCUS - SAS/AF</li> <li>- SYSTEM 2000 - SAS/FSP</li> <li>- SAS - SAS GRAPH</li> </ul> </li> <li>• GRAPHICS                     <ul style="list-style-type: none"> <li>- CUECHART</li> <li>- DISSPLA (VM ONLY)</li> <li>- TELL-A-GRAF</li> <li>- GDDM</li> <li>- TEMPLATE</li> </ul> </li> <li>• STRUCTURE ANALYSIS/DESIGN                     <ul style="list-style-type: none"> <li>- ANSYS - GTSTRUDL</li> <li>- MSC/NASTRAN - COSMIC/NASTRAN</li> <li>- UAI/NASTRAN</li> </ul> </li> <li>• INTERACTIVE STRUCTURAL MODELING                     <ul style="list-style-type: none"> <li>- PREP</li> </ul> </li> <li>• MATHEMATICAL AND STATISTICAL ANALYSIS                     <ul style="list-style-type: none"> <li>- CSMP II</li> </ul> </li> <li>• PIPING ANALYSIS/DESIGN                     <ul style="list-style-type: none"> <li>- ANSYS</li> </ul> </li> <li>• PETRO PRODUCTS (THIRD PARTY)                     <ul style="list-style-type: none"> <li>- ECLIPSE</li> <li>- SESAM 180</li> </ul> </li> </ul>

DEC-10 SERVICE APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT                     <ul style="list-style-type: none"> <li>- 5 DEC SYSTEM-10s, MODEL KL</li> <li>- 10 DEC SYSTEM-10s, MODEL KI</li> </ul> </li> <li>• PROGRAMMING LANGUAGES AND EDITORS                     <ul style="list-style-type: none"> <li>- APL</li> <li>- BASIC</li> <li>- COBOL</li> <li>- FORTRAN (F66)</li> <li>- MACRO-10</li> <li>- SIMULA</li> <li>- SPL</li> <li>- TEXT EDITOR</li> </ul> </li> <li>• DATA MANAGEMENT                     <ul style="list-style-type: none"> <li>- OLIVER</li> </ul> </li> <li>• MATHEMATICAL/STATISTICAL                     <ul style="list-style-type: none"> <li>- OLS/SAS</li> <li>- SPSS</li> <li>- SST</li> <li>- CSMP II</li> </ul> </li> <li>• GRAPHICS                     <ul style="list-style-type: none"> <li>- GDS</li> <li>- TEMPLATE</li> </ul> </li> <li>• ELECTRONIC MAIL                     <ul style="list-style-type: none"> <li>- UNIMAIL</li> </ul> </li> <li>• MODELING                     <ul style="list-style-type: none"> <li>- FAST</li> <li>- PREP</li> </ul> </li> <li>• COST ESTIMATING                     <ul style="list-style-type: none"> <li>- FAST-C</li> <li>- FAST-E</li> </ul> </li> </ul>

the scientific and engineering fields, including programs in civil and structural analysis, nuclear engineering, and large-scale integration design.

- The DEC-10 Service provides general-purpose remote computing with emphasis in the business/commercial areas. It accommodates both interactive and batch environments.
- The CENTRA Service is designed to provide access to IBM hardware, software, and networking capabilities. Users can access CENTRA to try new IBM releases, test new products, or add to in-house IBM processing capabilities.
- . Data centers for the former UIS unit are located in Kansas City and Pittsburgh.
- SIS also provides Vista, a line of microcomputer software for distributed processing. Vista products operate on IBM microcomputers and include:
  - . VistaCOM, an interface program controlling all asynchronous communications with data integrity and data compression features.
  - . VistaFORM, for full screen data entry.
  - . VistaDRAW, a graphing package that takes plot data from a host computer and plots it on a microcomputer.
  - . VistaSIGMA, a front-end to major engineering packages, allows users to build data on a microcomputer then call the host computer and submit the job. VistaSIGMA includes VistaCOM and VistaFORM.
- The part of SIS that was formerly CYBERNET Services provides computing power by using a variety of hardware sizes, ranging from desktop workstations to large mainframes and supercomputers. The Rockville (MD) Supercenter, the largest commercially available remote computing service, contains a CYBER 205 Supercomputer with memory capabilities representing 64 million bytes of main memory, and seven of Control Data's largest mainframes, including 800 Series equipment.
  - . Applications are targeted to the electrical utility, electrical/electronic engineering, mechanical engineering, and government markets.
  - . A profile of the major applications offered is presented in Exhibit C.

# CONTROL DATA COMPUTER SYSTEMS AND SERVICES GROUP

## EXHIBIT C

### ROCKVILLE SUPERCENTER NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT                             <ul style="list-style-type: none"> <li>- CDC CYBER 205, NOS, NOS/VE</li> <li>- CDC 800 SERIES</li> </ul> </li> <li>• PROGRAMMING LANGUAGES SUPPORTED                             <ul style="list-style-type: none"> <li>- APL, BASIC, COBOL, COMPASS, FORTRAN, PASCAL, SYMPL</li> </ul> </li> <li>• DATA MANAGEMENT SOFTWARE                             <ul style="list-style-type: none"> <li>- BASIS                      - SYSTEM 2000</li> <li>- IPF                        - TOTAL</li> <li>- IS/ATHENA               - TOTAL/ATHENA</li> <li>- LEXITEC</li> </ul> </li> <li>• DATA BASES AVAILABLE                             <ul style="list-style-type: none"> <li>- CEDA                     - TECHNOTE</li> <li>- EBIS                     - LOGIN</li> </ul> </li> <li>• MANAGEMENT SCIENCES                             <ul style="list-style-type: none"> <li>- APEX III                - PPS IV               - SORITEC</li> <li>- DCO/TRANPLAN         - PROPLAN       - BMDP</li> <li>- EZPERT                 - PROSE           - ORR</li> <li>- GPSS V                 - PSTAT</li> <li>- IMSL                    - SIMSCRIPT 11.5</li> <li>- NETFLOW II            - SIR/SIR II</li> <li>- PDS/MaGen             - SPSS</li> </ul> </li> <li>• FINANCIAL APPLICATIONS                             <ul style="list-style-type: none"> <li>- ASCENT SYSTEM</li> <li>- IFPS</li> <li>- SIBYL/RUNNER</li> </ul> </li> <li>• CAD/CAM                             <ul style="list-style-type: none"> <li>- ICEM</li> </ul> </li> <li>• ELECTRONICS                             <ul style="list-style-type: none"> <li>- ACSL                    - DIANA               - ASPEC</li> <li>- ARRAYGEN              - MICROLIB       - SUPREME II</li> <li>- CC-TEGASS              - PREDICTOR       - LOGIS</li> <li>- CYBER SPICE            - RESULTS           - SAMPLE</li> <li>- CSSL                    - RFOPT             - DYNAP</li> <li>- DEELAY                 - SYSCAP II       - CAL-MP</li> </ul> </li> <li>• ENERGY CONSERVATION                             <ul style="list-style-type: none"> <li>- BLAST                  - FCHART</li> <li>- DOE2                    - RSVP</li> <li>- ECUBE                  - SOLOCOST</li> <li>- EP                       - TRNSYS</li> </ul> </li> <li>• GRAPHICS                             <ul style="list-style-type: none"> <li>- DISSPLA                - SACM                - CPSI</li> <li>- PERSPECTIVE            - SURFACE-MAP       - EZPLOT</li> <li>- PLOT-PAC               - TIGS                - PATTERN/</li> <li>- PLOT-10                - UNIPLOT            DRAW</li> </ul> </li> <li>• MACHINERY                             <ul style="list-style-type: none"> <li>- CADENSE                - SDRC/SUPERTAB</li> <li>- MITAS II                - SINDA-9</li> <li>- SDRC/IMP                - THERMAL</li> <li>- SDRC/MDL               - TRASYS</li> <li>- SDRC/SUPERB</li> </ul> </li> </ul>	

APPLICATION AREA/PRODUCT NAME	
<ul style="list-style-type: none"> <li>• NUCLEAR FUEL MANAGEMENT                             <ul style="list-style-type: none"> <li>- ARMP                    - LEAHS</li> <li>- CITATION               - PDQ7/PDQ8</li> </ul> </li> <li>• OPTICAL SCIENCES                             <ul style="list-style-type: none"> <li>- OPTICAL SCIENCE LIBRARY</li> </ul> </li> <li>• PETROLEUM AND MINING                             <ul style="list-style-type: none"> <li>- GOLOG, GRAPH, MULTI-LITH - SEAMSYS</li> <li>- MINEVAL, MSCDES, MINECAN - POLYGON</li> <li>- SSI/100                               - MEGAS</li> <li>- SSTRAN, MTRAN, HCOMP,               - MVP &amp; VIP</li> <li>- TRANSFLOW, TLIQ, TCON               - OSCAR</li> <li>- STAMOR                               - SACS</li> <li>- INTERACTIVE PATTERN ANALYSIS</li> </ul> </li> <li>• PIPING ANALYSIS                             <ul style="list-style-type: none"> <li>- AAA-T                                - NUPIE</li> <li>- ADLPIPE                               - PIPERUP, PRTHRUST</li> <li>- CAPIM                                 - PIPESD</li> <li>- DIS                                    - PIPLIN II</li> <li>- EZFLEX                                - WAVENET</li> <li>- HANGIT</li> </ul> </li> <li>• POWER SYSTEMS OPERATIONS AND DESIGN                             <ul style="list-style-type: none"> <li>- COMMIT                  - MEVAL               - SYNFE</li> <li>- HEAT RATE               - WELDDA           - SYNTHA II</li> <li>- CURVE                    - PROCOS II</li> </ul> </li> <li>• POWER SYSTEMS PLANNING                             <ul style="list-style-type: none"> <li>- EMTRAN                  - SSR</li> <li>- POWER FLOW              - STABILITY</li> <li>- SCAN</li> </ul> </li> <li>• RADIATION SHIELDING AND CRITICALITY                             <ul style="list-style-type: none"> <li>- AMPX                    - DOT IV               - SPAN-4</li> <li>- ANISN                   - KENO-IV             - SAM-CE/2000</li> <li>- DOT 3.5                  - MORSE-CG</li> </ul> </li> <li>• REACTOR OPERATIONS SUPPORT                             <ul style="list-style-type: none"> <li>- NIPS                    - PREM</li> </ul> </li> <li>• REACTOR SAFETY ANALYSIS                             <ul style="list-style-type: none"> <li>- COBRA IV                - PISCES               - RCIPIE</li> <li>- CONTEMPT-LT            - RELAP4               - SETS</li> <li>- DYNODE-2                - RELAP5               - SURNAL</li> <li>- FLUSH                    - FRAPCON             - WAVENET</li> <li>- GALE                     - FRAP-T</li> </ul> </li> <li>• STRUCTURAL ANALYSIS                             <ul style="list-style-type: none"> <li>- ADINA                    - FASOR                - SAMBAS</li> <li>- ANSYS                    - ABAQUS               - STARDYNE</li> <li>- ARGUS                    - MARC-CDC            - UNISTRUC</li> <li>- CDC/NASTRAN             - PAFEC</li> <li>- EAC/EASE2                - SACS</li> </ul> </li> <li>• TELECOMMUNICATIONS                             <ul style="list-style-type: none"> <li>- CDCSAVE                - COMNET               - PWAC</li> <li>- CNET                    - NPJA                 - TELETAPS</li> </ul> </li> <li>• OTHER                             <ul style="list-style-type: none"> <li>- CYBERSEARCH</li> </ul> </li> </ul>	

## CONTROL DATA COMPUTER SYSTEMS AND SERVICES GROUP

- The CYBERNET\*EXPRESS Engineering Application Systems, introduced in March 1985, are turnkey products based on IBM PC or compatible microcomputers.
  - . Application software available for CYBERNET\*EXPRESS include: Electronics Designer, for schematic design and analysis; Structures, for finite element structural design and analysis; Piping, for analysis and design of piping systems and supports; Power Systems, for design and analysis of commercial and industrial electrical distribution systems including analysis of power protection; and Project Manager, for management of technical projects.
  - . CYBERNET\*EXPRESS software pricing ranges from \$3,500 to \$8,550.
- Professional services provided by SIS include application analysis and design, custom contract programming, and system maintenance.
- The Computer Integrated Manufacturing (CIM) Division, headquartered in Minneapolis, markets and supports the Integrated Computer-Aided Engineering and Manufacturing (ICEM) system, Control Data's family of application software for CAD/CAM.
  - ICEM is available to clients as a remote computing or distributed processing service through Scientific Information Services, or for license as a software product.
  - ICEM provides the following functions:
    - . Geometric modeling.
    - . Design/drafting of two- and three-dimensional geometrics.
    - . Finite element modeling (UNISTRUC II or PATRAN).
    - . Supports analysis products such as MSC/NASTRAN, EAC/EASE<sup>2</sup>, ABAQUS, GTSTRUDL, and ANSYS.
    - . Three-dimensional surface modeling (DUCT).
    - . Support for group technology applications.
    - . Numerical control.
    - . Programmed tooling.
    - . Electrical/electronic schematic generation and printed circuit board routing for mechanical CAD functions.
    - . Design and analysis of hydraulic systems.
    - . Kinematics.
    - . Facilities planning.
  - CIM also markets and supports ICEM workstations as follows:
    - . The ICEM 793 Intelligent Workstation consists of ICEM 790-20 Ergonomic Workstation, Application Processor, ICEM Workstation Operating System, and design/drafting or finite element

## CONTROL DATA COMPUTER SYSTEMS AND SERVICES GROUP

modeling applications. The ICEM 793 can operate as a stand-alone system or can be networked to a mainframe for data base management and engineering analysis. The system is priced from \$86,775 to \$94,075. Volume discounts are available.

- The ICEM 794 Workstation Cluster is an expandable dual user system and can be networked to a Control Data mainframe for data base management or other applications. The system consists of two graphics stations or terminals (ICEM Ergonomic Workstation or Tektronix 4109 terminals), an application processor, a system console, and ICEM design/drafting applications. The system is priced from \$86,265 to \$127,625. Volume discounts are available.
- The ICEM 800 System includes all ICEM applications software and operates on CYBER 180-800 series mainframes. This in-house system supports from 4 to over 100 workstations. Prices start at about \$500,000 for an entry-level CYBER 180-810 and vary depending on the application software and the number of workstations.

### INDUSTRY MARKETS

- Primary markets served by the Computer Systems and Services Group include the manufacturing, electric utilities, engineering services, and petroleum industries and higher education.

### COMPUTER HARDWARE

- Scientific Information Services operates two data centers that had been part of UIS:
  - Kansas City.
    - 1 CDC CYBER 175/130.
    - 1 CDC CYBER 175/174.
    - 1 CRAY-I Model S/2000.
    - 2 IBM 3083s.
  - Pittsburgh.
    - 16 DEC 10s.
- Scientific Information Services also operates a Supercenter in Rockville (MD). The Supercenter currently has a CYBER 205 supercomputer and seven 800 series CYBER mainframes, using NOS (Network Operating System) and NOS/VE (Virtual Environment). International access is also available. A dedicated CYBER 800 in Rockville is used for ICEM applications.



## COMPANY PROFILE

---

### CONTROL DATA CORPORATION

8100 34th Avenue South  
Minneapolis, MN 55440  
(612) 853-8100

Lawrence Perlman, President and CEO  
Public Corporation, NYSE  
Total Employees: 18,000 (12/89)  
Total Revenue, Fiscal Year End  
12/31/89: \$2,934,500,000  
Total Information Services Revenue:  
\$1.1 billion\*

\*INPUT estimate

---

### The Company

Control Data Corporation (CDC) provides computer hardware and associated maintenance services and a range of information services for business, scientific, and engineering applications to clients worldwide. Information services provided by CDC, which contributed an estimated \$1.1 billion to total revenue in 1989, include processing services, software products, professional and systems integration services, and turnkey systems.

During 1989, CDC implemented a major restructuring plan which included the following actions:

- CDC streamlined its Computer Products Group and has focused the group's business on providing high-performance computing products for engineering and scientific users (particularly in government and the automotive and aerospace industries), tools to manage data in integrated computing environments, and products to support the management of large, complex data bases. In addition to offering its CYBER workstations and mainframes, Computer Products has strategic partnerships with Silicon Graphics, Convex, Cray Research, and MIPS Computer Systems. Restructuring charges related to downsizing of Computer Products' operations were \$110 million in 1989.
- CDC discontinued its ETA Systems supercomputer operation and recorded a \$335 million restructuring charge. Although ETA achieved a number of technological successes, it had sustained significant losses (estimated at \$100 million during 1988 alone) and was not expected to be profitable in the near future.
- In May 1989, CDC sold Action Data Services to Primerica Corporation. CDC realized a \$17.8 million gain from the sale.

- Action Data Services provides on-line, real-time processing and support products to consumer credit companies and other financial service institutions in the U.S. and Canada.
- Action Data Services had estimated revenue of \$23 million in 1988.
- In June 1989, CDC sold its Control Data Institutes in the U.S. and Canada, as well as the Institute for Advanced Technology, to Minneapolis-based Human Capital Corporation. The two education units serve approximately 18,000 attendees annually.
- In June 1989, CDC sold its European third-party computer maintenance business to Thomainfor, a subsidiary of Thomson-CSF of France. CDC realized a \$9.7 million gain from the sale. Maintenance of CDC's CYBER product line continues to be performed by CDC.
- In July 1989, CDC sold the custom market research operations of SAMI/Burke to Burke's managers. This business, which operated as part of Arbitron, was originally acquired with SAMI/Burke in December 1987.
- In September 1989, CDC completed the sale of Imprimis Technology Incorporated, its disk drive subsidiary, to Seagate Technology for approximately \$250 million in cash, 10.7 million shares of Seagate common stock, and a \$50 million promissory note. As a result of the transaction, CDC has an 18% interest in Seagate.
- In October 1989, CDC completed the sale of the remainder of its Training and Education business (including PLATO-based products) to Chicago-based William R. Roach & Associates. CDC retains a 20% interest in the business, which has been formed into a new company called the Roach Organization.
- In December 1989, CDC sold its Ticketron sports and entertainment ticketing operations to the Washington, D.C.-based Carlyle Group. This business contributed approximately \$40 million to CDC's 1989 revenue.
- In December 1989, CDC recorded a \$110 million restructuring charge for the planned divestiture of VTC Incorporated, a wholly owned subsidiary that develops, manufactures, and markets high-performance integrated circuits using CMOS and bipolar technologies. Discussions regarding the sale of VTC are currently underway with various interested parties.

To date, CDC has made the following divestitures during 1990:

- In January 1990, CDC completed the sale of its U.S. and Canadian third-party hardware maintenance business to Bell Atlantic's Sorbus subsidiary. This business contributed approximately \$115 million to CDC's 1988 revenue. The sale included CDC's third-party maintenance customer base of about 6,000 and approximately 35 nationwide maintenance facilities.
- In March 1990, CDC sold its remaining training and education operation (industrial training) to a partnership headed by Drake International, Inc., a Canadian-based group of human resource and training companies. The business has been renamed Drake Training & Technologies. Other partners are NJK Associates of Minneapolis and CDC, who retains a minority interest in the company.
- In June 1990, Texas Instruments entered into an agreement to acquire CDC's Investment Management Information System (IMIS) product, customer base, and related employees. IMIS, currently marketed by CDC's Business Information Services unit within Data Services, integrates portfolio management and investment accounting functions.
- In July 1990, CDC sold Doane Information Services, a provider of software and services to the agricultural industry, to Doane Agricultural Services Company of Cherry Valley (IL). Doane Information Services previously operated as a unit within CDC Data Services.
- In July 1990, CDC completed the sale of its Printed Circuits Operation to Acisist Associates, Inc. The unit, with 128 employees, contributed \$11 million to CDC's 1989 revenue

CDC's total 1989 revenue was \$2.9 billion, compared to 1988 revenue of \$3.6 billion. Net losses of \$680.4 million primarily reflect net restructuring charges of \$663.3 million related to the divestitures and discontinued operations outlined above. A five-year financial summary follows:

**CONTROL DATA CORPORATION  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	1989	1988	1987	1986	1985
Revenue	\$2,934.5	\$3,628.3	\$3,366.5	\$3,346.7	\$3,679.7
• Percent increase (decrease) from previous year	19%	8%	1%	(9%)	--
Income (loss) before taxes and other items (a)	\$(668.4)	\$16.4	\$57.4	\$(280.6)	\$(484.0)
• Percent increase (decrease) from previous year	(507%)	(71%)	120%	42%	(868%)
Net income (loss)	\$(680.4)	\$1.7	\$19.3	\$(264.5)	\$(567.5)
• Percent increase (decrease) from previous year	(401%)	(91%)	107%	53%	*
Earnings (loss) per share	\$(16.11)	\$0.03	\$0.45	\$(6.48)	\$(14.56)
• Percent increase (decrease) from previous year	*	(93%)	107%	55%	*

\* Percent change exceeds 1,000%.

(a) Includes operations and investment restructure charges (credits) of \$663.3 million for 1989, \$(5.6) million for 1988, \$(107.6) million for 1987, \$162.2 million for 1986, and \$274.8 million for 1985.

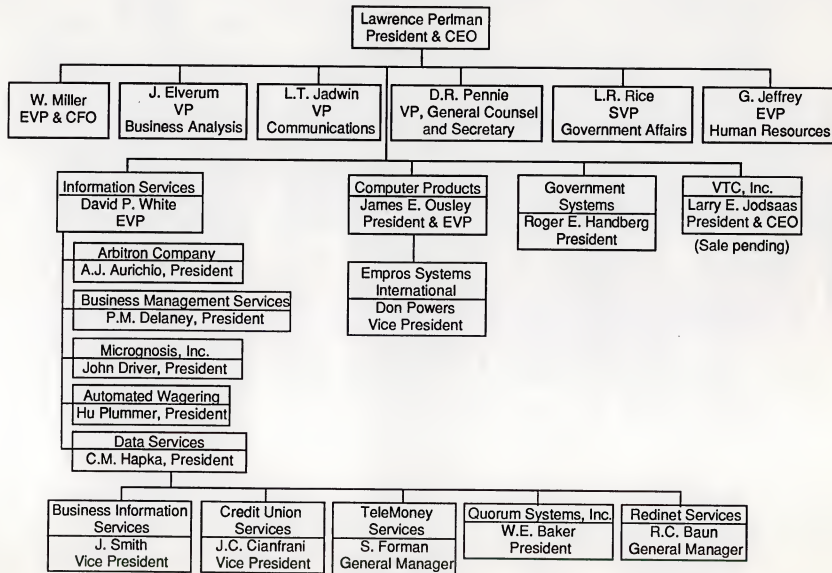
Over 95% of the revenue decline during 1989 was associated with operations that were sold or discontinued during 1988 and 1989.

Revenue for the six months ending June 30, 1990 was \$827.2 million, compared to \$1.65 billion for the same period in 1989. Net income for the period was \$18.0 million, compared to losses of \$493.8 million for the same period a year ago (which includes pre-tax restructuring charges of \$457.1 million).

- In the second quarter and first half of 1990, each of CDC's businesses was profitable before interest expense and taxes, except for Micrognosis and Empros.

Today, CDC is emphasizing its businesses as standalone units, each having its own identity, market, and responsibility for building competitive advantage. CDC's current organization is shown in the exhibit and is summarized as follows:

**EXHIBIT**  
**Control Data Corporation**



CONTROL DATA CORPORATION

INPUT

- The Arbitron Company, headquartered in New York (NY), measures TV and radio audiences, tracks consumer product sales, and integrates TV ratings and product purchase information for advertisers and broadcasters.
- Business Management Services, headquartered in Bloomington (MN), provides payroll processing and tax filing services, human resources management systems, accounting services, and benefit claims services to over 30,000 organizations nationwide.
- Micrognosis, Inc., headquartered in Danbury (CT), provides automated trading room turnkey systems that consolidate financial information for banks, securities firms, insurance companies, and corporate treasury departments. This unit has approximately 260 customers.
- Automated Wagering, headquartered in New York City, provides on-line processing services to state lotteries, international competitions, and off-track betting systems.
- Data Services currently includes the following five business units:
  - Business Information Services (BIS), headquartered in Greenwich (CT), provides decision support software products and processing services to clients in the transportation, hospitality, insurance, and financial services industries.
  - Credit Union Services, headquartered in Campbell (CA), provides processing services and turnkey systems to credit unions across the U.S.
  - TeleMoney Services (formerly EFT Data Services), headquartered in New York (NY), provides processing services for check and credit card authorizations.
  - Quorum Systems, Inc., headquartered in Plymouth Meeting (PA), provides processing services, software products, and turnkey systems to over 400 law firms and corporate legal departments for financial management, accounting, word processing, and litigation support.
  - REDINET Services, headquartered in Greenwich (CT), provides electronic data interchange (EDI) services.

- Computer Products provides and integrates high-performance computer-based solutions and services for scientific, engineering, and complex information management markets. Its high-performance computers include CYBER 910 workstations, the CYBER 900 family of mainframes, and the CYBER 4000 series of RISC-based departmental computers. Computer Products also provides worldwide maintenance services for products manufactured by CDC.
- CDC has an OEM agreement with Silicon Graphics and joint marketing agreements with Cray Research and Convex Computer Corporation. CDC is the exclusive distributor of Convex's C series supercomputers in some non-U.S. markets and the prime systems integrator in CYBER mainframe/C series installations for some vertical and geographic markets in the U.S.
- CDC also has a technology sharing agreement with MIPS Computer Systems for the joint development of RISC-based computers (CYBER 4000 series) that will be tuned for running specific applications.
- Empros Systems International (formerly Energy Management), headquartered in Plymouth (MN), integrates large systems for electric utilities that manage and control the generation, transmission, and distribution of electric power.
- Government Systems, headquartered in Bloomington (MN), supplies computer systems, hardware, software, and related services to the U.S. Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and similar agencies of U.S. allies. Government Systems is also a prime contractor and systems integrator.

As of December 31, 1989, CDC had approximately 18,000 employees. The company currently has approximately 17,000 employees, including 400 from VTC (whose sale is still pending).

#### **Key Products and Services**

A three-year summary of source of revenue follows:

**CONTROL DATA CORPORATION  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	1989		1988		1987	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Arbitron	\$290.0	10%	\$343.0	9%	\$178.5	5%
Automated Wagering/ Ticketron	160.3	5%	129.3	4%	122.8	4%
Business Management Services	170.5	6%	141.4	4%	115.4	3%
Computer Products	835.9	28%	1,058.9	29%	1,209.4	36%
Data Services	106.0	4%	133.2	4%	152.4	5%
Empros Systems	93.0	3%	93.3	2%	82.4	2%
Government Systems	367.4	13%	339.1	9%	354.4	11%
Micrognosis	99.1	3%	97.4	3%	70.3	2%
Imprimis/Data Storage Products	751.0	26%	1,146.0	32%	974.5	29%
Other (a)	61.3	2%	146.7	4%	1,06.4	3%
<b>TOTAL</b>	<b>\$2,934.5</b>	<b>100%</b>	<b>\$3,628.3</b>	<b>100%</b>	<b>\$3,366.5</b>	<b>100%</b>

(a) Includes VTC, ETA Systems, and Training and Education.

INPUT estimates that of CDC's \$2.9 billion in 1989 revenue, approximately \$1.1 billion was derived from its various information services activities, including the operations of Arbitron, Automated Wagering/Ticketron, Business Management Services, Data Services, and Micrognosis; the systems integration business of Empros Systems, Government Systems, and Computer Products; computer-integrated manufacturing products and services provided through Computer Products; and education and training (divested during 1989).

A further breakdown of CDC's worldwide information services revenue for 1989 is estimated by INPUT as follows:

Processing/network services	60%
Systems integration	18%
Turnkey systems	12%
Software products	8%
Professional services	
(including education and training)	<u>2%</u>
	100%

Recent significant contracts/events include the following:

- In June 1990, Soviet President Mikhail Gorbachev visited CDC in Minnesota. He participated in a demonstration of the CYBER computers the U.S.S.R. is purchasing in support of the design and operation of nuclear power plants.
- In late 1989, the U.S. Army Corps of Engineers awarded CDC a contract with a value of up to \$365 million for up to 11 years. CDC will provide an integrated worldwide network of CYBER computers. Over 50% of the contract revenues will come from systems integration services that Computer Products will provide.
- Automated Wagering was awarded a five-year, \$60 million contract to install and maintain the Minnesota State Lottery's on-line gaming system and a five-year, \$15 million contract with the South Dakota lottery. During 1989, Golden Grid plc, a private U.K. firm, awarded Automated Wagering a 10-year contract to operate a new on-line computer-based competition called Skilball.

### Industry Markets

Revenues from various U.S. government agencies were approximately \$399 million (14% of revenue) in 1989, \$406 million (11% of revenue) in 1988, and \$470 million (14% of revenue) in 1987.

Information services clients include advertisers and broadcasters, financial services firms (including banks, securities firms, insurance companies, and credit unions), corporate treasury departments, federal and state governments, scientific and engineering organizations, electric utilities, manufacturers, distributors, general businesses, hotels, airlines, legal firms and corporate legal departments, and consumers.

### Geographic Markets

A three-year summary of source of revenue follows:

**CONTROL DATA CORPORATION**  
**THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY**  
(\$ millions)

	FISCAL YEAR					
	1989		1988		1987	
ITEM	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$2,436.5	83%	\$3,088.3	85%	\$2,692.8	80%
International	1,132.3	39%	1,083.0	30%	1,188.2	35%
(Eliminations)	(634.3)	(22%)	(543.0)	(15%)	(514.5)	(15%)
<b>TOTAL</b>	<b>\$2,934.5</b>	<b>100%</b>	<b>\$3,628.3</b>	<b>100%</b>	<b>\$3,366.5</b>	<b>100%</b>

INPUT estimates 75% of CDC's 1989 information services revenue was derived from the U.S. and the remainder from international sources.

## COMPANY PROFILE

### CONTROL DATA CORPORATION

8100 34th Avenue South  
Minneapolis, MN 55440  
(612) 853-8100

Robert M. Price, Chairman, President  
and CEO  
Public Corporation, NYSE  
Total Employees: 42,300  
Total Revenue, Fiscal Year End  
12/31/85: \$3,679,700,000 (excluding  
Commercial Credit Company)  
Total Computer Services Revenue:  
\$1.2 billion\*

---

### THE COMPANY

- Control Data Corporation (CDC) markets computer hardware and associated maintenance services, computer services, and financial services to clients worldwide. CDC's current organization structure is presented in Exhibit A.
- The profile will focus on the computer services offered by CDC, which contributed an estimated \$1.2 billion to total revenue in 1985. CDC's processing services, software products, professional services, and turnkey systems activities are dispersed among several operating units within the corporation as follows:
  - The Business Services Group targets products and services to specific vertical markets, including banking and finance, manufacturing, healthcare, broadcasting, and legal services, as well as Fortune 1000 companies and small businesses. This group's current organization structure is presented in Exhibit B.
  - Within the Computer Systems and Services Group there are three business units providing processing services and software products: the Computer-Integrated Manufacturing division, providing CAD/CAM/CAE solutions to manufacturers; a division known as Scientific Information Services that combines the former CYBERNET and UIS divisions, offering distributed processing for several industries; and the Computer Applications Systems unit, through which software products designed to run on CDC computers are available. This group's current organization structure is presented in Exhibit C.
  - The Technical Support Services Group provides professional services and computer-based training services and software to a variety of industries. Other services activities of this group include computer-based personnel management consulting (Business Advisors) and hardware maintenance (Engineering Services). This group's current organization structure is presented in Exhibit D.

\*INPUT estimate

**EXHIBIT A**  
**CONTROL DATA CORPORATION**  
**ORGANIZATION CHART**

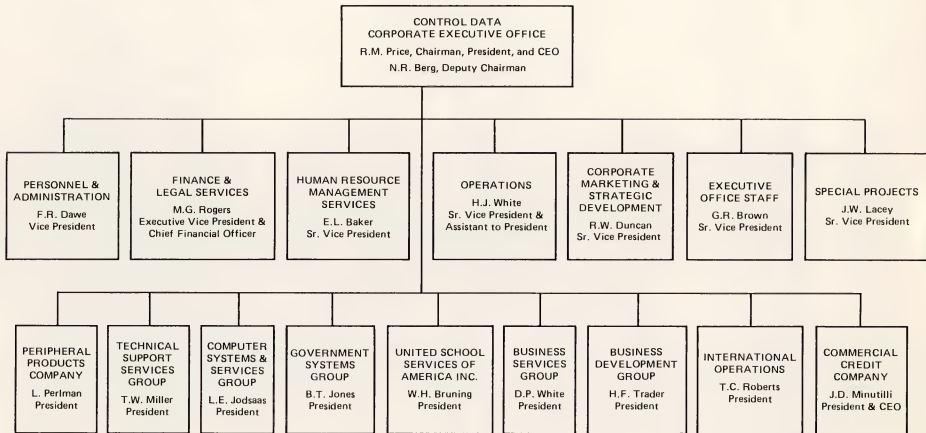


EXHIBIT B

ORGANIZATION CHART

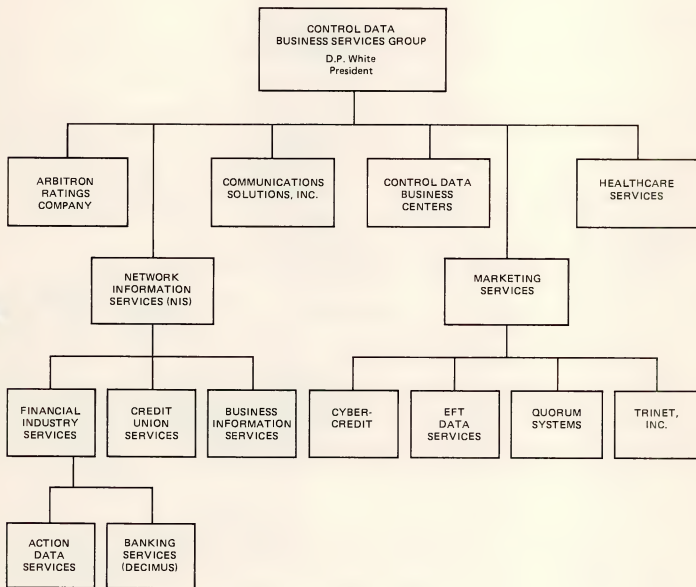


EXHIBIT C

ORGANIZATION CHART

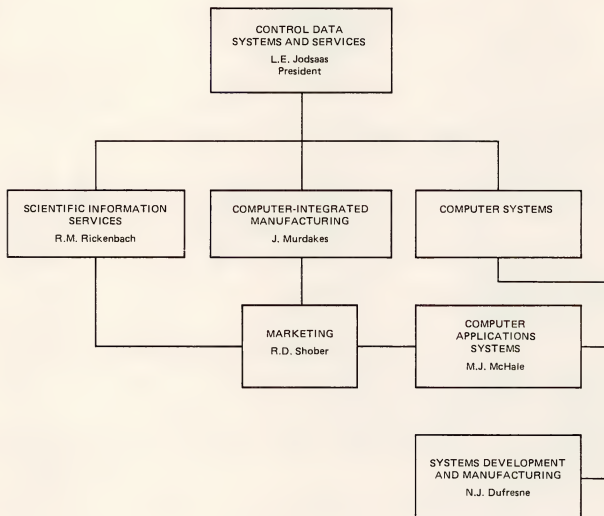
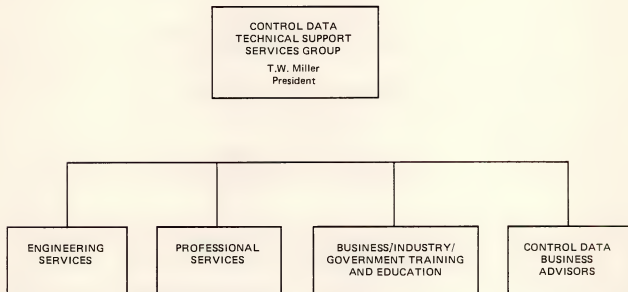


EXHIBIT D

ORGANIZATION CHART



## CONTROL DATA CORPORATION

- United School Services of America, a subsidiary formed during 1984, markets PLATO computer-based training services and products to primary and secondary schools.
- Control Data's Ticketron business offers automated ticket reservation services and automated wagering services. Ticketron has been identified by the company as being for sale.
- International CYBERNET operations are conducted through the International Group.
- Combined revenue from all of CDC's computer services activities was an estimated \$1.2 billion in 1985, compared to \$1.1 billion in 1984.
- Recent computer services-related acquisitions made by CDC include the following:
  - In May 1985 CDC acquired the California operations of Decimus Data Services Corporation from Bankamerica Corporation for an undisclosed amount of cash.
    - Decimus Data Services provided processing services to small and medium sized banks.
    - The operations of Decimus have been merged into the Business Services Group.
  - In December 1984 CDC acquired Compute-R-Systems, Inc. (CRS) of Plymouth Meeting (PA).
    - CRS provides processing services, software, and turnkey systems to law firms and corporate legal departments.
    - CRS had approximately 140 employees at the time of the acquisition.
    - CRS, which was merged with CDC's Legal Support Services, now operates as Quorum Systems within the Business Systems Group.
  - In 1984 CDC acquired the Multiple-Access Division of Canada Systems Group. Terms of the acquisition were not disclosed. The division, through its processing center in Don Mills (Ontario), provides value-added processing services to high technology, scientific, and engineering clients.
  - In November 1984 CDC acquired Communications Solutions, Inc. (CSI) from VisiCorp for approximately \$5 million in cash.
    - CSI provides professional services and SNA systems software products for IBM-compatible computers.

## CONTROL DATA CORPORATION

- CSI now operates as a wholly owned subsidiary within the Business Services Group.
- In August 1984 CDC purchased the technology rights to VisiOn from VisiCorp for an undisclosed sum. VisiOn is currently marketed by CDC's Business Information Services unit.
- In January 1984 CDC acquired United Information Services, Inc. (UIS) from United Telecommunications Inc. of Kansas City. Terms of the acquisition were not disclosed.
  - UIS provided engineering and scientific data processing services, software products, and professional services. It had annual revenue of approximately \$54 million and 1,300 employees at the time of the acquisition.
  - UIS operations have been combined with CYBERNET (U.S.) as part of the Systems and Services Group.
- In April 1983 CDC acquired TRES Computer Systems, Inc. of Dallas. TRES provided application software and supporting professional services to utilities, municipally owned utilities departments, and other industries.
  - TRES had revenues of approximately \$12.5 million in fiscal year 1982. The acquisition was made through an exchange of stock and the purchase price was not disclosed. TRES continues to operate as a standalone business unit.
- In March 1983 CDC acquired ARBAT consultants Ltd. and all of its worldwide affiliates from Dow Scandia Holdings Ltd. ARBAT Consultants is a holding company for ARBAT U.K. Ltd., based in London, and ARBAT Systems Ltd., based in Hoboken (NJ). ARBAT specialized in software for banking applications which runs on DEC PDP-11 and VAX computers. In addition to marketing the software, ARBAT provides processing services, facilities management, and consulting services. ARBAT is part of Financial Information Services within CDC's International Operations group.
- CDC has made equity investments in a number of computer services firms, including Conserv Corporation, Interactive Computer Modeling, Software Architectural & Engineering, Inc., SMR Computer Services, Inc., Digital Productions, Inc., Financial Information Systems, Inc., Holguin & Associates, and Source Telecomputing Corporation.
- Recent computer services-related divestitures made by CDC include the following:
  - In December 1985, Cincinnati Bell Information Services, Inc. (CBIS) acquired the COMMTRACK business from Control Data for \$1.9 million.

## CONTROL DATA CORPORATION

- COMMTRACK's computer-based service tracks the calling patterns of large telecommunications users, providing data to aid its customers in analyzing the efficiency and cost of its telephone service.
- In July 1985 CDC sold Brokerage Transaction Services, Inc. (BTSI) to Automatic Data Processing, Inc. for an undisclosed amount of cash plus contingent payments based on the next year's business results.
  - BTSI, headquartered in New York, provided back office transaction processing and recordkeeping services to over 50 customers in the U.S.
  - BTSI has annual revenue of approximately \$11 million.
- Of CDC's 42,300 employees at December 31, 1985, an estimated 10,000 were associated with computer services-related activities.
- Competitors for CDC's computer services are:
  - General and business processing services: Chase Econometrics/Interactive Data Corporation, McDonnell Douglas Information Systems Group, D&B Computing Services, ADP Network Services, CSC Infonet, and GEISCO.
  - Engineering and scientific products and services: GEISCO, McDonnell Douglas Information Systems Group, Boeing Computer Services, and UCCEL.
  - Computer integrated manufacturing products and services: IBM, Computervision, Integraph, Calma, and Applicon.
  - Credit union processing: Electronic Data Systems and Citicorp Information Services.
  - Ticket reservation services: Regional firms such as Ticket Master, Datatec, Ticketworld, BASS, and Select a Seat.

### SOURCE OF REVENUE

- INPUT estimates that CDC's \$1.2 billion in 1985 computer services revenue was derived approximately as follows:

Processing services	74%
Software products	9
Professional services	9
Turnkey systems	<u>8</u>
	100%
- An estimated 88% of CDC's 1985 computer services revenue was derived from the U.S. and 12% from foreign sources.

## COMPANY HIGHLIGHT

### CONTROL DATA CORPORATION

**DATA SERVICES**  
8100 34th Avenue South  
Minneapolis, MN 55440  
(612) 853-8100

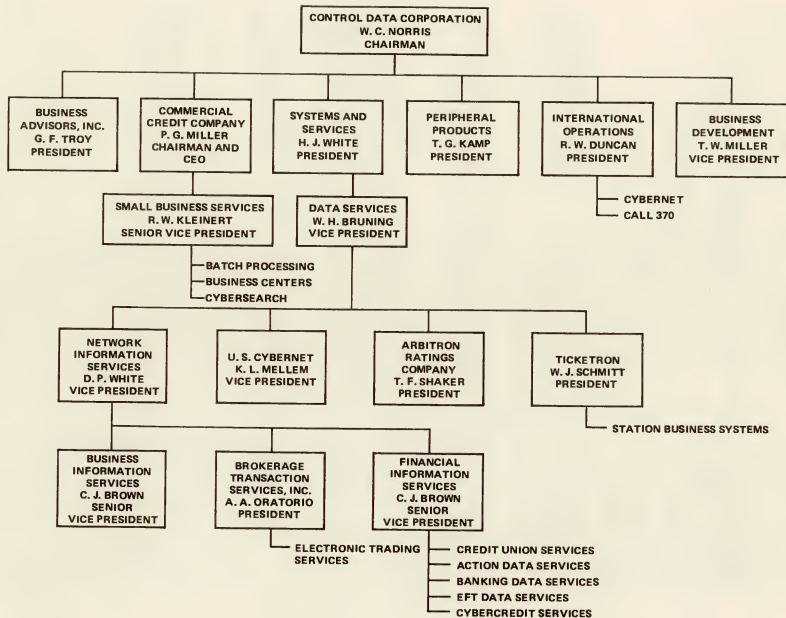
W. H. Bruning, Vice President  
Operating Unit of Control Data  
Corporation  
Data Services Revenue, Fiscal Year End  
12/31/81: \$616,000,000

---

### THE COMPANY

- Control Data Corporation (CDC) has been providing computer services since 1961. Most of its services activities are concentrated in Data Services, the reporting organization for CDC's remote computing services, ticket reservations, audience measurement, and financial services for credit unions, brokerage, banks, and consumer finance.
- In January 1982 CDC reorganized Data Services into four major business units: Network Information Services, Cybernet, Arbitron, and Ticketron. The new organization structure is presented in Exhibit A. Primary effects of the reorganization were:
  - The batch processing accounting services, formerly provided by the Service Bureau Company (SBC), were moved into CDC's Business Centers, an organization under Commercial Credit. The Business Centers provide financial advisory services, computer equipment, data processing, and loan services to small- and medium-sized businesses through retail outlets.
  - A new reporting unit, Network Information Services, was formed to consolidate the timesharing services provided by SBC, brokerage services, and other financial services such as credit unions and banking. SBC, as a separate business unit, no longer exists.
  - Station Business Systems was transferred to Ticketron.
- Revenue for CDC Data Services was \$616 million in 1981, a 13% increase over \$547 million in 1980. Included in these numbers is the batch processing revenue from the SBC unit transferred to Commercial Credit. Following is a five-year revenue summary of Data Services:

# EXHIBIT A



CONTROL DATA CORPORATION DATA SERVICES

# CONTROL DATA CORPORATION DATA SERVICES

## CDC DATA SERVICES FIVE-YEAR REVENUE SUMMARY (\$ millions)

ITEM \ FISCAL YEAR	1981	1980	1979	1978	1977
Revenue	\$616	\$547	\$474	\$408	\$340
Percent increase	13%	15%	16%	20%	N/A

- 1981 revenue estimates by business segment are as follows:

	Percent of Total	Revenue (\$ millions)
Network Information Services		
Timesharing	22%	\$135
Batch Processing	10	60
Brokerage	2	15
Financial Services	11	70
CYBERNET	24	145
Arbitron	11	66
Ticketron	11	70
Other <i>not CD</i>	9	55
	100%	\$616

- In addition to Data Services revenue, CDC has computer services activities in International Operations, Business Development, and the Systems groups. If CDC were to consolidate all its computer services activities under one reporting unit, INPUT estimates 1981 worldwide revenue as follows:

Data Services	\$615
Software (leased with hardware)	80
Professional Services	80
International CYBERNET and CALL 370	80
Plato and miscellaneous	25
	<u>\$880 million</u>

- In a previous CAMP Highlight on CDC, INPUT reported that CDC moved \$50 million into Data Services. At the time, we believed this was professional services revenue. It now appears the \$50 million may be coming from a combination of hardware and software systems that are produced for various business units within CDC.
- Two companies have been acquired for CDC's Data Services.

## CONTROL DATA CORPORATION DATA SERVICES

- In June 1981 Information Systems Design, Inc. (ISD), based in Santa Clara, was acquired and merged into CYBERNET. ISD provides engineering processing services and had revenue of about \$12 million at the time of acquisition.
- Economic Information Systems, Inc. (EIS), based in New York, was acquired in January 1982. EIS developed a data base containing information on 450,000 businesses with more than 20 employees and also compiled sales and purchasing information on the use of more than 1,000 products and services. EIS became part of Business Information Services.
- Two additional computer services companies were acquired by CDC but were not merged into Data Services. Computer Industries Corporation and Tabershaw Associates report to CDC's Business Development organization, a unit responsible for new business areas in health care services, educational services (PLATO), and socioeconomic services for small businesses.
  - Computer Industries Corporation, based in Cleveland, specializes in developing IBM and Hewlett-Packard turnkey financial and administrative systems for physicians, clinics, and hospitals.
  - Tabershaw Associates of Rockville, Maryland, markets a software package that determines the healthiness of a work place to help industries determine whether they are in compliance with federal health regulations.
- Competitors for CDC's Data Services are:
  - General and business timesharing services: Interactive Data Corporation, Tymshare, National CSS, ADP Network Services, STSC, CSC Infonet, and GEISCO.
  - Engineering and scientific timesharing: United Information Services, GEISCO, University Computing, MCAUTO, and Boeing Computer Services.
  - Brokerage services: Automatic Data Processing.
  - Credit unions: Electronic Data Systems and Citicorp.

## KEY PRODUCTS AND SERVICES

- Network Information Services is organized into three major business segments: Business Information Services, Brokerage Transaction Services, and Financial Information Services. Combined revenue of these units, including the batch processing business from SBC, are estimated by INPUT at \$285 million in 1981.

## CONTROL DATA CORPORATION DATA SERVICES

- Business Information Services (BIS) provides remote computing services from a data center in Cleveland.
  - Through a worldwide computer network, BIS specializes in providing financial modeling and planning tools, data bases, and industry specialty applications.
  - All elements required for customized, integrated, decision support systems are offered. These include tools for inquiry and reporting, planning and modeling, data base management, time series analysis and forecasting, and risk and statistical analysis.
  - BIS also offers access to leading external economic, industry and demographic data bases, specialized applications for key industries and functional areas, as well as the ability to convert any data into graphic presentations.
  - A profile of the applications offered on the BIS network is presented in Exhibit B.
- Brokerage Transaction Services, Inc. (BTSI), headquartered in New York, has been providing processing services to the brokerage industry since 1970.
  - Front office brokerage services link brokerage firm branch offices to trading locations for stock executions in real time.
  - Back office services are provided for accounting, stock, and bond transactions executed during the day, bookkeeping, margin accounting, and specialized functions for the cashiers department.
  - Approximately 100 brokerage houses and a few banks use the BTSI system.
  - There are about 150 BTSI employees.
  - Reporting to BTSI is Electronic Trading Services (ETS) based in Jersey City. ETS markets an on-line national electronic securities market service which allows brokers and market makers to instantaneously execute purchases and sales of securities.
- Financial Information Services include Credit Union Industry Services, ACTION Data Services, Banking Data Services, EFT Data Services, and CYBERCREDIT Services.
  - Credit Union Services provide processing services and turnkey systems to over 2,000 credit unions in the U.S.

## EXHIBIT B

## BUSINESS INFORMATION SERVICES NETWORK PROFILE

APPLICATION/PRODUCT NAME	APPLICATION/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT               <ul style="list-style-type: none"> <li>— IBM 303X, CALL 370, CALL PLUS</li> </ul> </li> <li>• PROGRAMMING LANGUAGES               <ul style="list-style-type: none"> <li>— CALL PLUS — CALL 370                   <ul style="list-style-type: none"> <li>• IBM ASSEMBLY</li> <li>• VS BASIC</li> <li>• COBOL</li> <li>• VS COBOL</li> <li>• FORTRAN</li> <li>• PL/I</li> <li>• RPG</li> <li>• VS APL</li> </ul> </li> <li>• BASIC</li> <li>• FORTRAN</li> <li>• G FORTRAN</li> <li>• PL/I</li> </ul> </li> <li>• DATA MANAGEMENT               <ul style="list-style-type: none"> <li>— X/L</li> <li>— EASYTRIEVE</li> <li>— MARK IV</li> </ul> </li> <li>• DATA BASES               <ul style="list-style-type: none"> <li>— AMBEST</li> <li>— AMERICAN PROFILE</li> <li>— BANKANAL</li> <li>— CENSUS PLUS</li> <li>— DOANE FARM MEDIA</li> <li>— EEI CAPSULE</li> <li>— EURABANK, EURARATE</li> <li>— EXSHARE</li> <li>— FAPRS</li> <li>— FED RESERVE Y9 BANK HOLDING</li> <li>— FEDWIR</li> <li>— FINANCIAL INSTITUTION DATA BASE: FDIC FSLIC, NCUA</li> <li>— FLOW OF FUNDS</li> <li>— GINNIE MAE DATA BASE</li> <li>— INTERNATIONAL FINANCIAL STATISTICS</li> <li>— INSURANCE INDUSTRY DATA</li> <li>— MISTI AND MUNIPRICE</li> <li>— ORR (CONSTRUCTION ESTIMATING)</li> <li>— SITE II; SITE POTENTIAL</li> <li>— VALPORT</li> <li>— X/DISCLOSURE</li> <li>— X/MARKET</li> <li>— X/PROFILE</li> </ul> </li> <li>• CROSS INDUSTRY APPLICATIONS               <ul style="list-style-type: none"> <li>— PLANNING/MODELING (PROPHIT II)</li> <li>— TIME SERIES (TIMEPACK)</li> <li>— RISK ANALYSIS (RISKAN II)</li> <li>— PLOTTING - GRAPHICS (PICTURE PAC)</li> <li>— STATISTICAL ANALYSIS (DATA PACK, SAS, APL STATISTICAL LIBRARY)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• BANKING/FINANCE               <ul style="list-style-type: none"> <li>— CORPORATE PLANNING</li> <li>— MONEY MARKET TRADING</li> <li>— TRUST AND ESTATE PLANNING</li> <li>— ASSET/LIABILITY MANAGEMENT</li> <li>— PERSONAL FINANCIAL PLANNING</li> <li>— CASH MANAGEMENT</li> <li>— PORTFOLIO MANAGEMENT</li> </ul> </li> <li>• MANUFACTURING/DISTRIBUTION               <ul style="list-style-type: none"> <li>— BUSINESS PLANNING AND COST CONTROL</li> <li>— FIXED ASSET DEPRECIATION ANALYSIS</li> <li>— MARKET ANALYSIS AND FORECASTING</li> <li>— SALES AND DISTRIBUTION ANALYSIS</li> <li>— CAPACITY REQUIREMENTS PLANNING</li> <li>— MASTER SCHEDULING</li> <li>— ORDER ENTRY &amp; CONFIRMATION</li> <li>— MATERIAL REQUIREMENTS PLANNING</li> <li>— INVENTORY/PURCHASING CONTROL</li> <li>— SHOP FLOOR CONTROL</li> </ul> </li> <li>• INSURANCE               <ul style="list-style-type: none"> <li>— INSURANCE PLANNING MODEL</li> <li>— SALES ILLUSTRATIONS</li> <li>— MULTIPLE POLICY ANALYSIS</li> <li>— TAX AND FINANCIAL PLANNING</li> <li>— INDIVIDUAL RETIREMENT ACCOUNTS</li> <li>— REAL ESTATE INVESTMENT ANALYSIS</li> </ul> </li> <li>• BROKERAGE/INVESTMENTS               <ul style="list-style-type: none"> <li>— SECURITY PORTFOLIO EVALUATION</li> <li>— OPTION INVESTMENT STRATEGY ANALYSIS</li> <li>— INTEREST RATE ANALYSIS AND FORECASTING</li> <li>— MONEY MARKET REPORTING</li> <li>— MUNICIPAL BOND REFUNDING ANALYSIS</li> </ul> </li> <li>• HEALTH CARE               <ul style="list-style-type: none"> <li>— FINANCIAL PLANNING</li> <li>— COST ALLOCATION</li> <li>— CASH FLOW PROJECTION/ANALYSIS</li> <li>— DEMOGRAPHIC/SERVICE AREA ANALYSIS</li> <li>— MEDICARE WORKSHEET PREPARATION</li> <li>— PERSONNEL UTILIZATION</li> <li>— RISK MANAGEMENT REPORTING</li> </ul> </li> <li>• GOVERNMENT               <ul style="list-style-type: none"> <li>— FEDERAL BUDGET ANALYSIS</li> <li>— STATE HUMAN RESOURCE MANAGEMENT</li> <li>— EXPENSE AND REVENUE PLANNING</li> <li>— STATE TAX TRACKING</li> <li>— WELFARE CASELOAD FORECASTING</li> </ul> </li> </ul>

## CONTROL DATA CORPORATION DATA SERVICES

- Credit union services are marketed through six service options:
  - FOCUS II, a batch service.
  - OCUS, a special batch service available only in Ohio.
  - FOCUS 300, an on-line service offered with fewer functions and at a reduced cost for smaller credit unions.
  - FOCUS IV, an on-line service offered at a reduced price when used during nonprime time.
  - FOCUS On-Line, the complete on-line version with no price reductions.
  - FOCUS ONE, a standalone minicomputer system for use in large credit unions.
- Approximately 1,200 credit unions use the FOCUS and OCUS batch services, and 800 are on-line users.
  - All on-line services are provided from a data center in Campbell (CA).
  - Batch services are provided from data centers now under the CDC Business Center organization.
- Applications available in the on-line version of FOCUS are:
  - Share draft and loan draft processing.
  - Automated share and loan postings.
  - Certificate processing.
  - General ledger and financial reporting services.
  - Check preparation.
  - Delinquency notices and management reports.
  - EFTS funds deposit.
  - VISA credit card support.
- FOCUS ONE, the standalone minicomputer system, has been installed in about 45 credit unions since it was introduced in 1980.
  - FOCUS ONE operates on an IBM Series I and ranges in price from \$150,000 to \$750,000 depending on software and peripherals required.

## CONTROL DATA CORPORATION DATA SERVICES

- All application software available on the on-line service is offered on FOCUS ONE.
  - Credit Union Services also markets a Distributed Data Processing (DDP) system using a Data General MP 100 system in conjunction with its on-line service.
  - DDP provides on-line processing of share and loan transactions and includes features for on-line inquiry displays, member account history, general ledger, and report printing at credit unions.
  - Price of the hardware ranges from \$30,000 to \$50,000.
- ACTION Data Services, based in St. Louis, provides a nationwide on-line real time processing service for the consumer and commercial finance industry.
  - On-line and off-line processing systems are:
    - ACTION System for consumer finance loan accounting.
    - ACTION Plus System for commercial finance loan accounting.
    - Savings System for certificate of deposit and passbook accounts.
    - Open-End Lending System for revolving credit loans.
  - On-line capabilities include:
    - Reporting up-to-the-minute operating and management statistics.
    - Delinquency paid listing.
    - Account follow-up listing.
    - Listing of funds transferred for regional banking.
    - Payment handling and production of checks.
  - Off-line capabilities include:
    - Accounting reports.
    - Delinquency reports.
    - Unearned reports.
    - Audit reports.
    - State banking reports.
    - General ledger processing and interface.
    - Printing and mailing of customer statements.
    - Calculation of interest, service charges, APR, insurance refunds, and payment schedules.

## CONTROL DATA CORPORATION DATA SERVICES

- Banking Data Services provides batch processing services and on-line services to small- and medium-sized banks in California and Indiana from a data center in Los Angeles.
  - Applications available include:
    - General ledger.
    - Commercial loans.
    - Demand deposit.
    - Central information file.
    - Savings accounting: time certificates, time deposit, club savings, and regular savings.
    - NOW accounting.
- EFT Data Services, based in Greenwich (CT), provides payment authorization services to commercial banks which, in turn, market the service to retail merchants.
  - EFT's TeleMoney Service enables commercial banks to provide point-of-sale check verification, check guarantee, and credit card authorization services.
  - Retail outlets are connected via terminals to the TeleMoney on-line transaction system.
- CYBERCREDIT is a loan collection system marketed to banks. Capabilities include:
  - On-line tracking system for delinquent account portfolios.
  - Automated scheduling for collection contacts.
  - Storage of relevant data from user's host computer and from clerical files.
  - Tracking system for collector developed data.
  - System flexibility to meet specific customer needs.
  - Management reports for delinquent record, trend analysis, and write-off.
  - Collector activity reports for collector statistics, time usage, and collector change.
- CYBERNET provides a range of scientific and engineering application services from five U.S. and Canadian data centers and 13 overseas locations. INPUT estimates CYBERNET's U.S. and Canadian revenue at \$145 million in 1981 and believes it is the fastest growing of CDC's two major remote computing services.
  - CYBERNET applications are targeted to the manufacturing, petroleum, mining, electrical, nuclear, engineering and architecture, construction and utilities industries.

## CONTROL DATA CORPORATION DATA SERVICES

- A profile of the major applications offered on CYBERNET is presented in Exhibit C.
  - With the acquisition of Information Systems Design, several new applications for electrical engineering have been added: ASPEC, SUPREME II, LOGIS, SAMPLE, DYNAP, and CAL-MP.
  - Additional applications were added in petroleum and mining, machinery, and reactor safety analysis.
- Within the last year, CYBERNET has introduced several hardware products for use as standalone systems or as distributed processors.
  - The CYBERNET Microcomputer Workstation can operate as a standalone system for application processing and development and as a remote processor linked to the CYBERNET network. The workstation uses a CYBER 110, a Z80 CP/M based microcomputer.
  - The GeoCYBER Mining Workstation is a minicomputer based system that can operate as a standalone system at remote sites or can be interfaced to CYBERNET or another host computer. It allows mining companies to perform data manipulation and display functions at remote sites while relying on a host processor to construct and analyze large geologic models.
    - Based on a Data General 16-bit minicomputer, GeoCYBER sells for \$100,000 to \$300,000 depending on options.
    - Some of the software offerings are FORTRAN V, sort/merge, a HASP emulator, and a word processing utility.
  - The CYBER Remote Station 55 (CRS-55) is a remote job entry system designed for commercial and scientific applications. It can also serve as a standalone minicomputer for local application development.
    - CRS-55 uses a Data General 16-bit processor.
    - Basic software on the system includes the Advanced Operating System (AOS) and HASP II communications protocol. Optional software includes FORTRAN V, BASIC, AZ-TEXT (word processing), and CalComp Plotter Driver.
- CYBERNET also markets the Integrated Computer-aided Engineering and Manufacturing (ICEM) system, CDC's family of application software for CAD/CAM. ICEM provides a range of applications for design, drafting, modeling, analysis, and numerical control.

## CONTROL DATA CORPORATION DATA SERVICES

## EXHIBIT C

## CYBERNET NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT               <ul style="list-style-type: none"> <li>- CDC CYBER 170 AND 200/NOS, SCOPE</li> </ul> </li> <li>• PROGRAMMING LANGUAGES SUPPORTED               <ul style="list-style-type: none"> <li>- ALGOL, APL, BASIC, COBOL, COMPASS, FORTRAN, SIMULA, SIMSCRIPT</li> </ul> </li> <li>• DATA MANAGEMENT SOFTWARE               <ul style="list-style-type: none"> <li>- BASIS</li> <li>- IPF</li> <li>- IS/ATHENA</li> <li>- LEXITEC</li> <li>- SYSTEM 2000</li> <li>- TOTAL</li> <li>- TOTAL/ATHENA</li> </ul> </li> <li>• DATA BASES AVAILABLE               <ul style="list-style-type: none"> <li>- CEDA</li> <li>- EBIS</li> <li>- TECHNOTE</li> <li>- LOGIN</li> </ul> </li> <li>• MANAGEMENT SCIENCES               <ul style="list-style-type: none"> <li>- APEX III</li> <li>- DCO/TRANPLAN</li> <li>- EZPERT</li> <li>- GPSS V</li> <li>- IMSL</li> <li>- NETFLOW II</li> <li>- PDS/MaGen</li> <li>- PPS IV</li> <li>- PROPLAN</li> <li>- PROSE</li> <li>- PSTAT</li> <li>- SIMSCRIPT 11.5</li> <li>- SIR/SIR II</li> <li>- SPSS</li> <li>- SORITEC</li> <li>- BMDP</li> <li>- ORR</li> </ul> </li> <li>• FINANCIAL APPLICATIONS               <ul style="list-style-type: none"> <li>- ASCENT SYSTEM</li> <li>- IFPS</li> <li>- SIBYL/RUNNER</li> </ul> </li> <li>• ELECTRONICS               <ul style="list-style-type: none"> <li>- ACSL</li> <li>- ARRAYGEN</li> <li>- CC-TEGAS5</li> <li>- CYBER SPICE</li> <li>- CSSL</li> <li>- DEELAY</li> <li>- DIANA</li> <li>- MICROLIB</li> <li>- PREDICTOR</li> <li>- RESULTS</li> <li>- RFOPT</li> <li>- SYSCAP II</li> <li>- ASPEC</li> <li>- SUPREME II</li> <li>- LOGIS</li> <li>- SAMPLE</li> <li>- DYNAP</li> <li>- CAL-MP</li> </ul> </li> <li>• ENERGY CONSERVATION               <ul style="list-style-type: none"> <li>- BLAST</li> <li>- DOE2</li> <li>- ECUBE</li> <li>- EP</li> <li>- FCHART</li> <li>- RSPV</li> <li>- SOLOCOST</li> <li>- TRNSYS</li> </ul> </li> <li>• GRAPHICS               <ul style="list-style-type: none"> <li>- DISPLA</li> <li>- PERSPECTIVE</li> <li>- PLOTAC</li> <li>- PLOT-10</li> <li>- SACM</li> <li>- SURFACE-MAP</li> <li>- TIGS</li> <li>- UNIPLOT</li> <li>- CPSI</li> <li>- EZPLOT</li> <li>- PATTERN/DRAW</li> </ul> </li> <li>• MACHINERY               <ul style="list-style-type: none"> <li>- CADENSE</li> <li>- MITAS II</li> <li>- SDRG/IMP</li> <li>- SDRG/MDL</li> <li>- SDRG/SUPERB</li> <li>- SDRG/SUPERTAB</li> <li>- SINDA-9</li> <li>- THERMAL</li> <li>- TRASY</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• NUCLEAR FUEL MANAGEMENT               <ul style="list-style-type: none"> <li>- ARMP</li> <li>- CITATION</li> <li>- LEAHS</li> <li>- PDQ7/PDQ8</li> </ul> </li> <li>• OPTICAL SCIENCES               <ul style="list-style-type: none"> <li>- OPTICAL SCIENCE LIBRARY</li> </ul> </li> <li>• PETROLEUM AND MINING               <ul style="list-style-type: none"> <li>- GOLOG, GRAPH, MULTI-LITH</li> <li>- MINEVAL, MSCDES, MINECAN</li> <li>- SSI/100</li> <li>- SSTRAN, MTRAN, HCOMP,</li> <li>- TRANSFLOW, TLIQ, TCON</li> <li>- STAMOR</li> <li>- INTERACTIVE PATTERN ANALYSIS</li> <li>- SEAMSYS</li> <li>- POLYGON</li> <li>- MEGAS</li> <li>- MVIP &amp; VIP</li> <li>- OSCAR</li> <li>- SACS</li> </ul> </li> <li>• PIPING ANALYSIS               <ul style="list-style-type: none"> <li>- AAA-T</li> <li>- ADLPIPE</li> <li>- CAPIM</li> <li>- DIS</li> <li>- EZFLEX</li> <li>- HANGIT</li> <li>- NUPIPE</li> <li>- PIPERUP, PRTHRUST</li> <li>- PIPESD</li> <li>- PIPLIN II</li> <li>- WAVENET</li> </ul> </li> <li>• POWER SYSTEMS OPERATIONS AND DESIGN               <ul style="list-style-type: none"> <li>- COMMIT</li> <li>- HEAT RATE</li> <li>- CURVE</li> <li>- MEVAL</li> <li>- WELDDA</li> <li>- PROCOS II</li> <li>- SYNTHA II</li> </ul> </li> <li>• POWER SYSTEMS PLANNING               <ul style="list-style-type: none"> <li>- EMTRAN</li> <li>- POWER FLOW</li> <li>- SCAN</li> <li>- SSR</li> <li>- STABILITY</li> </ul> </li> <li>• RADIATION SHIELDING AND CRITICALITY               <ul style="list-style-type: none"> <li>- AMPX</li> <li>- ANISN</li> <li>- DOT 3.5</li> <li>- DOT IV</li> <li>- KENO-IV</li> <li>- MORSE-CG</li> <li>- SPAN-4</li> <li>- SAM-CE/2000</li> </ul> </li> <li>• REACTOR OPERATIONS SUPPORT               <ul style="list-style-type: none"> <li>- NIPS</li> <li>- PREM</li> </ul> </li> <li>• REACTOR SAFETY ANALYSIS               <ul style="list-style-type: none"> <li>- COBRA IV</li> <li>- CONTEMPT-LT</li> <li>- DYNODE-2</li> <li>- FLUSH</li> <li>- GALE</li> <li>- PISCES</li> <li>- RELAP4</li> <li>- RELAP5</li> <li>- FRAPCON</li> <li>- FRAP-T</li> <li>- RAPIE</li> <li>- SETS</li> <li>- SURNAL</li> <li>- WAVENET</li> </ul> </li> <li>• STRUCTURAL ANALYSIS               <ul style="list-style-type: none"> <li>- ADINA</li> <li>- ANSYS</li> <li>- ARGUS</li> <li>- CDC/NASTRAN</li> <li>- EAC/EASE2</li> <li>- FASOR</li> <li>- ABAQUS</li> <li>- MARC-CDC</li> <li>- PAFEC</li> <li>- SACS</li> <li>- SAMBAS</li> <li>- STARDYNE</li> <li>- UNISTRUC</li> </ul> </li> <li>• TELECOMMUNICATIONS               <ul style="list-style-type: none"> <li>- CDCSAVE</li> <li>- CNET</li> <li>- COMNET</li> <li>- NPJA</li> <li>- PWAC</li> <li>- TELETAPS</li> </ul> </li> <li>• OTHER               <ul style="list-style-type: none"> <li>- CYBERSEARCH</li> </ul> </li> </ul>

## CONTROL DATA CORPORATION DATA SERVICES

- Major applications provided are:
  - CD/2000: design, drafting, and numerical control.
  - CDC SynthaVision: interactive geometric modeling.
  - CYBERMAN: generates a montage of human body measurements.
  - Structural analysis: UNISTRUC II, MSC/NASTRAN, ANSYS, SDRC Mechanical Design Library, STARDYNE, GTSTRUDL, FASOR, FEMGEN, ABAQUS, and EAC/EASE 2.
  - ICEM Data Library: allows large amounts of part geometry and other engineering data to be stored in a single data base.
- ICEM applications are available on CYBERNET, as software products for license, or a subset can be purchased for basic drafting functions on a CYBER 120.
- A manufacturing applications center has been opened in Waltham (MA) which provides rooms, outfitted with workstations, for mechanical engineering applications. Basic charge for use of a workstation is \$50 per hour with additional charges for processing.
  - A similar center for petroleum applications has been opened in Houston.
  - A center in Sunnyvale (CA) is being equipped to provide a walk-in service for electrical engineering applications.
- CYBERNET also has an OEM agreement with Daisy Systems Corporation to market the LOGICIAN, a standalone workstation for schematic design of electrical components. The LOGICIAN is priced between \$75,000 and \$100,000.
- Arbitron Ratings Company, with 1981 revenue estimated at \$66 million, is one of the leading companies in broadcast audience measurement services. Headquartered in New York, Arbitron operates two data centers in Rockville and Beltsville (MD) that collect, analyze, and prepare reports on the viewing and listening habits of the general public.
  - Audience measurement services are provided to more than 6,000 clients. Included are 600 television stations, 1,900 radio broadcasters, and over 3,500 advertisers and agencies.

## CONTROL DATA CORPORATION DATA SERVICES

- Arbitron's field staff of more than 3,000 contacts about two million households annually to obtain television-viewing and radio-listening information.
- Data on viewing and listening habits are collected through diaries and, for some television audiences, through metering devices.
  - Meters are installed in households to collect and store tuning information. The units are polled overnight and data is collected in the Beltsville center.
  - Arbitron metering services are available in New York, Chicago, Los Angeles, and San Francisco. Metering services will be extended to 10 additional cities in the next two years. There are 350 to 450 meters installed in each city.
- Audience measurement and profile studies are also conducted for the cable television industry.
- Arbitron employs about 750 full-time personnel and over 3,000 part-time field personnel.
- Ticketron is organized into three divisions and one subsidiary operation, Station Business Systems. INPUT estimates Ticketron's 1981 revenue at \$70 million.
  - Ticketron's Sports and Entertainment Division provides automated reservations and ticketing for theaters, concerts, sporting events, and camping. The division operates in over 400 U.S. cities in 22 states plus two Canadian provinces. Over 1,200 terminals are installed in box offices and retail outlets, processing in excess of 45 million tickets annually.
    - In addition to processing services, Ticketron markets two stand-alone systems for the automation of accounting functions and ticketing operations of sports teams, universities, and entertainment groups. Both systems use CYBER 18-20 mainframes and are leased. Approximately 25 of the standalone systems have been installed.
      - Ticketron 2000, using a floppy disk memory, leases for \$38,000 a year.
      - Ticketron 2001, sold with a larger disk capacity, leases for \$58,000 a year.
    - Ticketron's Automated Wagering Division maintains a separate data center in Upstate New York to operate the state's off-track-betting system.

- . The Lottery Division provides facilities management processing services for state lotteries in Pennsylvania, Delaware, Maryland, Illinois, and New York.
- . There are about 6,000 terminals installed to serve the Automated Wagering and Lottery Division operations. Processing volume of these two divisions exceeds 32 million transactions per week.
- Station Business Systems, based in Greenwich, markets two turnkey products for radio, television, and cable television operators.
  - . The BAT 1700 Billing Accounting and Traffic System is marketed to radio and television stations. It is sold on Datapoint 6600s or ARC systems and offers applications for business functions.
    - Applications available include full accounting (GL, AP, AR), inventory management, scheduling, and management reporting. It also has the capability of interfacing with process control computers.
    - There are 250 BAT systems installed serving over 350 stations.
    - Price of a system ranges from \$40,000 to over \$100,000. An average system sells for \$60,000.
  - . The Subscriber Business System was introduced in late 1979 for cable television operators. Applications available include subscriber processing billing, inventory management, a service scheduling capability, accounts receivable, general ledger, and payables.
    - Subscriber Business System 2000 uses Texas Instrument 990s and is marketed to stations with 10,000 subscribers or more.
    - Price of the system ranges from \$90,000 to \$250,000.
  - . Station Business Systems also offers NEWSKOM, a modular system for television news rooms. NEWSKOM performs word processing functions for writing and editing news stories, capture of wire service data, a production facility to assemble newscasts, an assignment desk capability, and an archival capability. It also interfaces to electronic prompting. It is sold on Datapoint ARC systems and is priced between \$100,000 and \$250,000.

## INDUSTRY MARKETS

- Primary industry markets served by CDC Data Services are banking and finance, manufacturing, utilities, government, and petroleum.

## COMPUTER HARDWARE AND SOFTWARE

- North American CYBERNET data centers are in Minneapolis, Rockville, Houston, Sunnyvale, and Toronto, Canada. International centers are in London, Paris, Brussels, Stockholm, Frankfurt, Melbourne, Johannesburg, Tel Aviv, Mexico City, Rijisijk (Holland), Tokyo, Athens, Tawain, and Rio de Janeiro. Mainframes used in the centers are primarily CYBER 170s with NOS and SCOPE operating systems.
  - In 1982 CYBERNET installed two CDC 205s in its Minneapolis data center (Arden Hills).
  - A dedicated CYBER 720 in Rockville (MD) is used for CYBERNET's CAD/CAM applications (ICEM).
- Business Information Services' data center in Cleveland uses IBM 370/158 and 303X equipment with the CALL 370 and CALL PLUS operating system. CALL 370 uses a custom operating system and CALL PLUS uses MVS.
- Financial Services data centers are in:
  - Campbell (CA), Credit Union Services.
    - IBM 370/158.
    - CDC Omega 480.
  - St. Louis (MO), ACTION Data Services.
    - IBM 370/158.
- Brokerage Transaction Services Inc. has three IBM 4341s in New York.
- Arbitron Ratings Company has twin CDC 3500s and two CDC 1700s in Beltsville and uses a CDC CYBER 175 in the CYBERNET Center in Rockville.
- Ticketron operates data centers in Inglewood (CA) and New York. CYBER 18s are installed in both centers. The Automated Wagering Division has centers in New York, Pennsylvania, Maryland, Illinois, and Delaware.



THE SERVICE BUREAU COMPANY

RECEIVED

OCT 13 1981

PALM BEACH

September 18, 1981

Dear SBCer:

As you know, SBC will be undergoing structural changes as part of a corporate reorganization that will position Control Data for continued growth and leadership in the exciting and challenging years ahead.

Our business units will become important segments of two new organizations, Small Business Services within Commercial Credit Company, and Network Information Services within the Data Services Company.

Small Business Services is responsible for leading Control Data's efforts in the small business market. For the first time, Control Data's products and services for small businesses will be centralized within one organization. SBC's General Business Services, with more than 7,500 customers and 50 years of experience in providing data processing services to small businesses, will join with CONTROL BUSINESS SYSTEM and the SBC Business Centers group to form the cornerstone of the Small Business Services organization. GBS Development will also join Small Business Services.

Our business units that use a communication network -- Time-sharing Services, EFT Data Services, ACTION Data Services, ETS and BTSI, will become part of the newly-formed Network Information Services group, bringing new cohesion, as well as added economies and efficiencies, to Control Data Corporation's leadership position in worldwide network-based data services.

The headquarters staff will continue to support all the business units as it has in the past. After the investigation of various real estate alternatives for the headquarters function, we have concluded that we will remain in our current location.

Let me emphasize that the plans and goals you and your management set for 1981 remain in effect through year-end. All of us will be appraised according to those goals. We've had a good first half, and your continuing efforts should result in another successful year for SBC.

Now, let's take a look at the 1981 business.



Data Processing Services had an active and successful first half, as GBS revenue grew 13 percent over the same period a year ago. There were 1,106 new GBS accounts closed. We have increased our emphasis on national marketing programs and will continue leveraging third party marketing through organizations of CPAs and trade associations, where we expect results similar to our banking successes. And we're continuing our commitment to new education and training programs, product development and an enhanced operating environment, with new CPUs already in place in 25 DPS processing locations.

Since the introduction of the FOCUS ONE System, our credit union mini-computer product, in early 1980, sales have climbed to 27 accounts totaling nearly \$8 million in revenue. The largest 1981 FOCUS ONE sale to date was made to the United Mine Workers of America Federal Credit Union, with 26 terminals and locations in several states. Combining the many benefits of the On-Line FOCUS and the in-house FOCUS ONE systems, the newly-released FOCUS Intelligent Control Unit (ICU) is off to a fast start with 14 units sold to date. And On-line History, the most significant enhancement yet to the On-Line FOCUS system, immediately attracted the interest of 70 percent of our on-line credit union customer base when it was offered this Spring. It has been sold to 450 credit union customers.

Eight new customers have ordered CONTROL BUSINESS SYSTEM, our minicomputer product, this year. Our development effort in this important new business segment is progressing as planned, in preparation for launching a new application system in 1982. Eight new Atlanta-developed software applications will enable our CBS prospects to use minicomputer software comparable to software they already benefit from as GBS customers.

Time-sharing Services, now serving more than 4,200 customers, realized revenue growth of nearly 19 percent for the first half of 1981 over the same period last year. In order to capitalize on large revenue opportunities, a national support services group has been formed to assist field marketing in the support of large opportunities in commercial and government, and three new field positions have been created. Currently, there are more than 35 account managers, industry representatives and marketing support representatives bringing experience and leadership to branch large account marketing efforts. A 35 percent growth in the accounts managed by account managers testifies to the program's success.

A growing interest in the X/L System among the data processing organizations in many of the nation's largest companies has helped drive the revenues from that product to nearly \$2 million per month, almost double the figure I mentioned in my letter to you in February.



In the International area of Time-sharing, CALL/370 revenue continues to grow with particularly strong performances in Australia, Japan and France. Seven Western European cities have been added to the worldwide CALL/370 network in 1981, and service to Canada has been expanded to virtually every major city. The multinational marketing program continues to gain momentum both in the U.S. and in non-U.S. locations.

Brokerage Transaction Services, Inc., experienced a 12 percent growth of revenue during the first half of 1981 even though primary emphasis has been on conversion to the new front-end system and improving reliability. Among system enhancements released recently by BTSI is On-line Data Inquiry. This powerful sales tool, which can be accessed through desktop terminals, is also helping BTSI's customers attract high-caliber sales personnel.

In the first six months of 1981, EFT Data Services' merchant base increased more than 10 percent. EFT is now processing credit card authorization and check clearance transactions at the rate of seven million per year, a 55 percent increase over 1980. In June, EFT installed its computer-to-computer link to Avis, and now processes all bank card Avis car rentals nationwide.

A dedicated customer installation and service group has been established to support the CYBERCREDIT loan collection system business. Five CYBERCREDIT customers have been installed in 1981, including a 55-terminal sale to Detroit's Bank of the Commonwealth.

ACTION Data Services added 15 new subscribers, using 89 terminals, in the first six months of this year. It is halfway through the conversion to the Data Services Network, and expects to be reaping the benefits of that highly complex operation by year end. ACTION recently converted to Control Data 33302 disk drives, helping achieve greater system reliability, faster throughput and increased volume of customer transactions. This Spring, ACTION participated in the National Consumer Finance Association Annual Convention for the first time as an exhibitor, where staffers also demonstrated how other Control Data products can benefit the finance industry.

Electronic Trading Services also achieved growth during the first half of 1981. The number of broker/dealer participants was increased, additional securities issues were listed, and an interface was established with the Intermarket Trading System, allowing orders on other stock exchanges to be routed and executed on the Cincinnati Stock Exchange, and vice-versa. These factors all contributed to an increase in share volume of 38 percent over the first six months of 1980, and an increase in revenue of 25 percent over the same period in 1980.



Our first Business Centers opened in May, and as of mid-August, orders for CYBER 120 Small Computer Systems had been taken at each facility. The seminar selling approach has been very well received, and the number of prospects for the CYBER 120 System continues to grow at a healthy rate. Each of the Centers is holding a minimum of two seminars per week, and in August, our Business Center staffs began conducting seminars on the CYBER 120 for Commercial Credit prospects in Commercial Credit-managed Business Centers. To further acquaint Commercial Credit staffs with the CYBER 120 System, one-day training programs are being held at our Centers.

Our business is strong, and with your continued efforts, we can make 1981 the best year ever -- the ninth straight record year for The Service Bureau Company.

Your sustained top performance during the changes that lie ahead will mean new opportunities for success in your own personal career growth as well as in our business. The best of luck to you Great Performers in the remaining months of 1981, and in the exciting era yet to come.

Sincerely,

A handwritten signature in dark ink, appearing to read "RW Kleinert". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

R. W. Kleinert  
President



PREPARED BY: *[Signature]*SUBMITTED BY: *[Signature]*REVIEWED BY: *[Signature]*APPROVED BY: *[Signature]*

SYSTEMS AND SERVICES  
COMPANY  
H. J. WHITE  
PRESIDENT

FINANCIAL PLANS & CONTROLS  
T. A. GILLEAN  
VICE PRESIDENT

PERSONNEL AND ADMINISTRATION  
B. L. MANSON  
VICE PRESIDENT

STRATEGIC PLANS & PROGRAMS  
M. M. STUCKEY  
VICE PRESIDENT

## COMPUTER SYSTEMS

E. J. OLES  
SR. VICE PRESIDENT

- TECHNOLOGY DEVELOPMENT  
L. M. THORNDIKE  
SR. VICE PRESIDENT
- SYSTEMS DEVELOPMENT  
M. J. MCMALE  
VICE PRESIDENT
- SYSTEMS OPERATIONS  
H. N. FRAZIER  
VICE PRESIDENT
- APPLICATIONS SYSTEMS  
M. T. MAHN  
VICE PRESIDENT
- PRODUCT LINE MGMT.  
F. P. VINCE  
VICE PRESIDENT
- SYSTEMS MARKETING  
S. L. RICKLEMAN  
VICE PRESIDENT
- FINANCIAL PLANS & CONTROLS  
P. G. HOFFMAN  
GENERAL MANAGER
- PERSONNEL & ADMIN.  
J. H. LASSIDY  
GENERAL MANAGER

## GOVERNMENT SYSTEMS

B. T. JONES  
VICE PRESIDENT

- U. S. OPERATIONS  
W. J. DUBESNE  
VICE PRESIDENT
- GOV. CONTRACTS & PROGRAMS  
L. T. KIMMANN  
VICE PRESIDENT
- U.S. CONT. SYSTEMS MGT.  
J. L. CRICKET  
VICE PRESIDENT
- COMPUTING DEVICES CO.  
T. S. ALLAN  
PRESIDENT
- INTERNATIONAL PROGRAMS  
G. H. HANSEN  
GENERAL SALES MGR.
- STRATEGY & BUSINESS DEV.  
D. J. LENKE  
GENERAL MANAGER
- FINANCIAL PLANS & CONTROLS  
D. R. NYRKS  
GENERAL MANAGER
- PERSONNEL & ADMIN.  
C. L. SODERBLIND  
DIRECTOR

## U. S. MARKETING

R. A. BALDELLI  
VICE PRESIDENT

- EASTERN REGION  
C. F. MARINO  
VICE PRESIDENT
- MIDWEST REGION  
W. N. ROSE  
VICE PRESIDENT
- SOUTHEAST REGION  
J. A. PELLARUP  
VICE PRESIDENT
- SOUTHWEST REGION  
C. J. RIES  
REGIONAL MANAGER
- WESTERN REGION  
R. B. LOUTHAN  
VICE PRESIDENT
- CONTRACTS  
M. D. CLOVER  
VICE PRESIDENT
- MARKETING SERVICES  
M. B. CLARK  
VICE PRESIDENT
- MARKETING PROGRAMS  
R. A. BALDELLI  
(ACTING)
- FINANCIAL PLANS & CONTROLS  
D. R. HARTFORD  
DIRECTOR
- PERSONNEL & ADMIN.  
R. A. RICH  
DIRECTOR

## DATA SERVICES

M. H. BRUNING  
VICE PRESIDENT

- NETWORK INFORMATION SERVICES  
D. P. WHITE  
VICE PRESIDENT
- U.S. CYBERNET  
J. MURPHY  
VICE PRESIDENT
- CONSULTING  
O. K. STATION  
VICE PRESIDENT
- ARBITRON  
T. F. SHAYER  
PRESIDENT
- TICKETPON  
W. J. SCHNITT  
PRESIDENT
- DATA SERVICES STRATEGY  
R. N. PLYTO  
VICE PRESIDENT
- FINANCIAL PLANS & CONTROLS  
R. R. GUERLT  
VICE PRESIDENT
- PERSONNEL & ADMIN.  
S. E. ARAMKON  
VICE PRESIDENT

## ENGINEERING SERVICES

J. H. CALDWELL  
VICE PRESIDENT

- U.S. OPERATIONS  
H. D. DERIES  
VICE PRESIDENT
- LOGISTICS  
R. E. JOHNSON  
VICE PRESIDENT
- PRODUCT LINE MGMT.  
R. D. KAZDA  
GENERAL MANAGER
- ENGINEERING SERV. EDUC.  
R. L. BABI  
GENERAL MANAGER
- ENGINEERING  
R. D. DEGRUTE  
DIRECTOR
- SYNCHRON TECHNOLOGY  
D. H. LAFF  
PRESIDENT
- MARKETING  
R. G. CROWTHER  
GENERAL SALES MANAGER
- MARKETING SUPPORT  
G. L. SJODEN  
SR. CONSULTANT
- SPECIAL PROGRAMS  
B. P. ROTHMANN  
EXECUTIVE CONSULTANT
- FINANCIAL PLANS & CONTROLS  
R. J. RUEHLER  
GENERAL MANAGER
- PERSONNEL & ADMIN.  
R. E. FORMAN  
GENERAL MANAGER

## PROFESSIONAL SER.

J. E. DAVIS  
VICE PRESIDENT

- TECHNOLOGY CENT.  
C. GLADIA  
VICE PRESIDENT
- EASTERN REGION  
R. F. JOHNSON  
GENERAL MANAGER
- MIDWEST REGION  
J. F. PAULIST  
GENERAL MANAGER
- SOUTHEAST REGION  
J. V. CARON  
GENERAL MANAGER
- SOUTHWEST REGION  
W. G. HUSLER  
GENERAL MANAGER
- WESTERN REGION  
W. O. PARADIS  
GENERAL MANAGER
- STRATEGIC PROGRAMS  
M. G. RICHY  
GENERAL MANAGER
- MARKETING  
J. E. DAVIS  
(ACTING)
- SUPPORT SERVICES  
J. E. ANDERSEN  
DIRECTOR
- NATIONAL RESOURCES  
D. E. BEAVER  
MANAGER
- FINANCIAL PLANS &  
B. M. RICHARD  
GENERAL MANAGER
- PERSONNEL & TECH.  
J. E. RELLER  
DIRECTOR

*International  
Cybernet  
Call*



# NETWORK INFORMATION SERVICES

D. P. WHITE  
VICE PRESIDENT

FINANCIAL PLANS & CONTROLS  
R. R. OBEYLE  
(ACTING)

PERSONNEL AND ADMINISTRATION  
D. W. BOYCE  
DIRECTOR

NETWORK ARCHITECTURE AND  
PLANNING  
F. K. MORIKAWA  
VICE PRESIDENT

AUGUST 3, 1981

PREPARED BY: *D. P. White*  
D. P. WHITE

SUBMITTED BY: *D. P. White*  
D. P. WHITE

REVIEWED BY: *S. E. Abramson*  
S. E. ABRAMSON

APPROVED BY: *W. H. Baldwin*  
W. H. BALDWIN

TIME-SHARING SERVICES  
*C. J. Brown*  
C. J. BROWN  
VICE PRESIDENT

SLIWORK OPERATIONS SERVICES  
J. E. PATRINGER  
VICE PRESIDENT

BROKERAGE TRANSACTION  
SERVICES, INC.  
A. A. ORATORIO  
PRESIDENT

FINANCIAL SERVICES  
G. J. BROWN  
SR. VICE PRESIDENT

ON-LINE SYSTEMS DEVELOPMENT  
P. R. SCHENCK  
GENERAL MANAGER

DATA SYSTEMS - ROSEVILLE  
S. D. WHITTENBURG  
GENERAL MANAGER

DATA SYSTEMS - LAJOLLA  
M. L. DISKENSON  
VICE PRESIDENT

CENTRAL AREA  
D. E. HALL  
GENERAL MANAGER

NORTHEAST AREA  
C. R. STUCKEY  
GENERAL MANAGER

SOUTHEAST AREA  
W. T. ELLY  
GENERAL MANAGER

WEST AREA  
M. S. MCABE  
GENERAL MANAGER

MARKETING DEVELOPMENT  
J. A. KELLER  
GENERAL MANAGER

INTERNATIONAL PROGRAMS  
J. S. SMITH  
DIRECTOR

TIME SHARING SERVICES  
G. SHANNESSETT  
PRINC. CONSULTANT

MARKETING PROGRAMS  
R. C. BALD  
MANAGER

MANUFACTURING IND.  
W. M. HUGHES  
MANAGER

SPECIAL PROJECTS  
M. T. REDDY  
MANAGER

CLEVELAND OPS CENTER  
W. D. TIMBERLAKE  
MANAGER

CANFIBELL OPS. CENTER  
T. J. GOOD  
MANAGER

NETWORK OPERATIONS  
J. O. McKENNA  
DIRECTOR

DEVELOPMENT  
D. W. FORD  
MANAGER

FINANCIAL PLANS & CONTROLS  
C. R. ANDERSON  
CONTROLLER

PERSONNEL & ADMIN.  
W. CROSSBY JR.  
MANAGER

ELECTRONIC TRADING SERVICES  
C. W. GRISWOLD  
PRESIDENT

MARKETING  
D. F. KASUN  
MANAGER

NEW BUSINESS PLNG.  
P. R. DUFFONE  
MANAGER

SYSTEMS & OPERATIONS  
P. R. SCHENCK  
(ACTING)

FINANCE & ADMIN.  
R. P. MCCOUGH  
MANAGER

PERSONNEL  
M. L. GRASSIE  
MANAGER

ACTION DATA SERVICES  
W. E. BAYER  
GENERAL MANAGER

EFT DATA SERVICES  
D. N. LALLINIA  
GENERAL MANAGER

BANKING DATA SERVICES  
H. W. DUKRETT  
PRESIDENT

FINANCE IND. PLANNING  
S. A. OLSON  
MANAGER

CREDIT UNION IND. SVCS.  
(FOCUS)  
G. J. BROWN (ACTING)

CYBERCREDIT SERVICES  
R. N. RIALY  
NATL. SALES MANAGER

NETWORK & SPECIAL SYSTEMS  
L. C. GRADDOCK  
GENERAL MANAGER

DEVELOPMENT SUPPORT  
R. M. HUDSON  
MANAGER

ADMINISTRATION  
N. E. SOVANNUE  
MANAGER

PERSONNEL  
P. L. HOGUE  
MANAGER

DEVELOPMENT  
L. W. SCHULZE  
DIRECTOR

MANUFACTURING  
S. W. STECKMEYER  
DIRECTOR

BUSINESS MGMT. OFFICE  
A. F. BRESLAUER  
MANAGER

QUALITY ASSURANCE  
A. C. MIRONOWICZ  
MANAGER

PLANNING  
J. W. RUECK  
MANAGER

ACCOUNTING  
O. T. JOHNSON  
CONTROLLER

PERSONNEL & ADMIN.  
T. L. BRADFORD  
MANAGER

QUALITY ASSURANCE  
M. S. ANTIPOFF  
MANAGER

PRODUCT LINE MGMT.  
A. F. BRESLAUER  
MANAGER

PROGRAMMING  
A. J. RUTTA  
MANAGER

ENGINEERING  
L. M. RAKSCH  
MANAGER

ACCOUNTING  
R. E. REHENT  
CONTROLLER

PERSONNEL  
O. A. CASTAD  
MANAGER

What's  
left of  
small  
computer  
support  
group  
that  
failed



## COMPANY PROFILE

---

### CONTROL DATA CORPORATION

8100 34th Avenue South  
Minneapolis, MN 55440  
(612) 853-8100

Robert M. Price, Chairman and CEO  
Lawrence Perlman, President and COO  
Public Corporation, NYSE  
Total Employees: 30,000 (6/89)  
Total Revenue, Fiscal Year End  
12/31/88: \$3,628,300,000  
Total Information Services Revenue:  
\$1.1 billion\*

\*INPUT estimate

---

### The Company

Control Data Corporation (CDC) provides computer hardware and associated maintenance services and a range of information services for business, scientific, and engineering applications to clients worldwide. Information services provided by CDC, which contributed an estimated \$1.1 billion to total revenue in 1988, include processing services, software products, professional and systems integration services, and turnkey systems.

Poor performances and liquidity pressures in 1984 and 1985 underscored the fact that, over the course of many years, CDC had become far too diverse. During 1986, CDC management established a restructuring program based on the following basic strategies:

- To refocus its business from a broad diversity of products and services to those businesses in which the company has adequate size and future opportunity to achieve success with available resources.
- To move CDC from a product orientation to a market orientation.
- To make investments and expenditures necessary to develop new products and services that are competitively advantaged.
- To underpin the investment in competitively advantaged products and services with a commitment to quality, implemented by CDC's Total Quality Management Process (TQMP).

As a part of the restructuring begun in 1986, CDC has sold or closed nearly 20 businesses or product lines, including the following:

- During 1986, CDC sold Trinet, Inc. to a group of investors led by the venture capital group of Welsh, Carson, Anderson & Stowe.
  - Trinet, headquartered in Parsippany (NJ), operated within CDC's Information Services Group, providing data base services related to business information and telemarketing consulting services.
- Also during 1986, CDC sold Communications Solutions, Inc. (CSI) to Altos Computer Systems.
  - CSI, which operated within CDC's Information Services Group, provided a range of IBM-compatible communications software products.
- In October 1986, Commercial Credit Company, CDC's wholly owned financial services subsidiary, became a publicly owned company headed by Sanford Weill. CDC initially retained a 18.3% interest in Commercial Credit, but sold it to Commercial Credit in late 1987. Net proceeds from the 1986 and 1987 transactions totaled \$837.5 million.
- In April 1987, CDC sold ARBAT Consultants Ltd to Winter Partners Holding AG of Zurich (Switzerland).
  - ARBAT specialized in DEC software for banking applications and provided processing services, facilities management, and consulting services.
- During 1987, CDC sold its Healthcare Services division to 3M.
  - The division, headquartered in Minneapolis (MN), operated within CDC's Information Services Group, providing application software products and turnkey systems to over 200 medical industry clients.
- In December 1988, CDC sold its Scientific Information Systems (SIS) division to Power Computing Company, a unit of Babcock & Wilcox.
  - SIS, which operated within CDC's Computer Products Group, provided remote data processing services for scientific and engineering applications.
- In March 1989, CDC sold its Control Data Institutes (which provide vocational computer career training) in West Germany and France to Australian-based Computer Power Group Ltd.

- In April 1989, CDC announced a \$490 million restructuring plan which included the following actions:
  - CDC streamlined its Computer Products Group and has focused the group's business on providing high-performance computing products for engineering and scientific users, particularly in government and the automotive and aerospace industries, and tools to manage data in integrated computing environments. In addition to offering its CYBER workstations and mainframes, Computer Products has an OEM agreement with Silicon Graphics and joint marketing agreements with Convex and Cray Research.
  - CDC discontinued its ETA Systems supercomputer operation. Although ETA achieved a number of technological successes, it had sustained significant losses (estimated at \$100 million during 1988 alone) and was not expected to be profitable in the the near future.
  - As a result of the streamlining of its mainframe business, discontinuing ETA, and reducing corporate staff, CDC cut a total of 3,100, or 9.1%, of its worldwide workforce.
- In May 1989, CDC sold Action Data Services to Primerica Corporation.
  - Action Data Services, which operated within CDC's Information Services Group, provides on-line, real-time processing and support products to consumer credit companies and other financial service institutions in the U.S. and Canada.
  - Action Data Services had estimated revenue of \$23 million in 1988.
- In June 1989, CDC sold its Control Data Institutes in the U.S. and Canada, as well as the Institute for Advanced Technology, to Minneapolis-based Human Capital Corporation. The two education units serve approximately 18,000 attendees annually.
- In June 1989, CDC agreed to sell Imprimis Technology Incorporated, its disk drive subsidiary, to Seagate Technology for approximately \$450 million in cash and securities. When the sale of Imprimis to Seagate is complete, CDC will have approximately an 18% interest in the combined companies.

- Imprimis, with approximately 8,500 employees worldwide, was formed in September 1988 when CDC established its Data Storage Products Group as a separate subsidiary, allowing it to operate more autonomously.
- While Imprimis has become a major profit and cash contributor to CDC, the technology and business cycle demands of the OEM disk drive industry it must respond to are significantly different from that of other CDC businesses.
- For CDC, the transaction means a potential reduction in debt, additional cash for working capital, an ongoing investment in the OEM disk drive business, and the opportunity to concentrate the company's efforts and resources on the growth of its systems and services businesses.
- In June 1989, CDC sold its European third-party computer maintenance business to Thomainfor, a subsidiary of Thomson-CSF of France. Maintenance of CDC's CYBER product line in Europe will continue to be performed by CDC.
- In July 1989, CDC signed a letter of intent to sell the remainder of its Training and Education business (including PLATO-based products) to Chicago-based William R. Roach & Associates. CDC will retain a 20% interest in the new company William R. Roach & Associates is forming.

Acquisitions made by CDC include the following:

- In December 1986, CDC purchased Broadcast Advertisers Reports, Inc. (BAR) and its wholly owned subsidiary, Radio/TV Reports, Inc. (RTV) for \$58.5 million.
- BAR monitors television and radio commercials and compiles advertising rate information. RTV provides photo boards and television and radio transcripts for the advertising and public relations industries.
- The operations of BAR have been merged into Arbitron.
- In December 1987, CDC purchased SAMI/Burke, Inc., a market research firm that tracks consumer product purchases, from TIME Incorporated for \$60 million in cash plus future payments based on SAMI/Burke revenue growth during the years 1991 through 1994.

- SAMI has subsequently become part of Arbitron to enable the combined operations to integrate information about what products Americans buy with data about what media are influencing their decisions.
- CDC sold the Burke custom research business to Burke's managers in July 1989.
- During 1987, CDC acquired the remaining 51% equity interest in VTC Incorporated, a manufacturer of high-performance integrated circuits. VTC now operates as a wholly owned subsidiary of CDC.
- In April 1988, CDC acquired a 20% interest in Silicon Graphics, Inc. for \$68.9 million. Silicon Graphics' workstation products include 3D graphics workstations which are the basis of CDC's CYBER 910 workstations.
- In April 1988, CDC increased its interest in Micrognosis, Inc., ultimately owning 100% of the financial information services company.

CDC finished 1988 with revenue of \$3.6 billion. As a result of asset sales and write-offs, it expects to be a \$2 billion company in 1990.

- CDC management states that, "once known almost entirely for its hardware, soon the company's computer-based services and systems integration businesses will account for over 60% of its revenues."
- A five-year financial summary follows:

**CONTROL DATA CORPORATION  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ millions, except per share data)**

ITEM	FISCAL YEAR				
	1988	1987	1986	1985	1984
Revenue	\$3,628.3	\$3,366.5	\$3,346.7	\$3,679.7	\$3,692.6
• Percent increase (decrease) from previous year	8%	1%	(9%)	--	8%
Income (loss) before taxes and other items (a)	\$16.4	\$57.4	\$(280.6)	\$(484.0)	\$(50.0)
• Percent increase (decrease) from previous year	(71%)	120%	42%	(868%)	(126%)
Net income (loss) (b)	\$1.7	\$19.3	\$(264.5)	\$(567.5)	\$5.1
• Percent increase (decrease) from previous year	(c) (91%)	(d) 107%	53%	*	(97%)
Earnings (loss) per share	\$0.03	\$0.45	\$(6.48)	\$(14.56)	\$0.12
• Percent increase (decrease) from previous year	(93%)	107%	55%	*	(97%)

\* Percent change exceeds 1,000%.

- (a) Includes operations and investment restructure charges (credits) of \$(5.6) million for 1988, \$(107.6) million for 1987, \$162.2 million for 1986, \$274.8 million for 1985, and \$130.2 million for 1984. Restructure amounts include gains of \$4 million in 1988 and \$1366.2 million in 1987 and a loss of \$6.9 million in 1986 from the disposition of the CDC's interest in Commercial Credit Company.
- (b) Includes net earnings (losses) from Commercial Credit of \$3.5 million in 1987, \$42.6 million in 1986, \$(4.8) million in 1985, and \$49.6 million in 1984.
- (c) Includes a charge of \$400,000 resulting from the cumulative effect as of the beginning of the year of the adoption of FAS No. 96, a new standard for income taxes, in the fourth quarter of 1988.
- (e) Includes a loss of \$6.5 million from early retirement of debt, less a benefit of \$800,000 from utilization of international tax loss carryforwards.

CDC management states that in 1985, most of the company's businesses were losing money. Today, as a result of the strategies implemented for the past several years, approximately two-thirds of CDC's revenues are from businesses that are operating profitably.

Revenue for the six months ending June 30, 1989 was \$1,647.8 million, compared to revenue of \$1,853.9 million for the same period in 1988. Net losses were \$493.8 million, compared to net earnings of \$16.9 million for the same period a year ago.

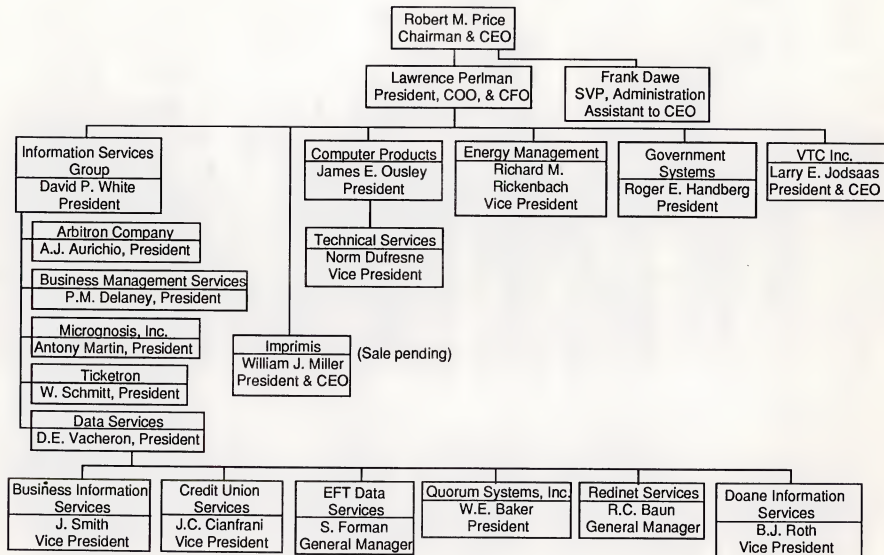
- The \$493.8 million loss includes restructuring charges of \$476 million (\$493.8 million of charges offset by a restructuring gain of \$17.8 million from the second quarter sale of Action Data Services). The restructuring charges, as mentioned earlier, included provisions for the discontinuance of ETA, the restructuring and downsizing of Computer Products' operations, and the reduction of corporate staff
- Second quarter results before restructure charges primarily reflected losses in Computer Products and VTC that were partially offset by profits achieved by Imprimis, Information Services, and Energy Management. Government Systems also reported a small loss.

Today, CDC is beginning to emphasize its businesses as standalone units, each having its own identity, market, and responsibility for building competitive advantage. CDC's current organization is shown in the exhibit and is summarized as follows:

*Control Data Information Services Group:*

- The Arbitron Company, headquartered in New York (NY), measures TV and radio audiences, tracks consumer product sales, and integrates TV ratings and product purchase information for advertisers and broadcasters.
- Business Management Services (formerly Control Data Business Centers), headquartered in Bloomington (MN), provides payroll processing and tax filing services, human resources management systems, accounting services, and benefit claims services to over 30,000 organizations nationwide.
- Micrognosis, Inc., headquartered in Danbury (CT), provides automated trading room turnkey systems that consolidate financial information for banks, securities firms, insurance companies, and corporate treasury departments. This unit has approximately 200 customers.
- Ticketron, headquartered in New York (NY), provides on-line processing services to state lotteries, off-track betting systems, and supplies computerized ticketing systems that link consumers with sports and other entertainment events.

# EXHIBIT Control Data Corporation



- Data Services includes the following six business units:
  - Business Information Services (BIS), headquartered in Greenwich (CT), provides decision support software products and processing services to clients in the transportation, hospitality, insurance, and banking and finance industries.
  - Credit Union Services, headquartered in Campbell (CA), provides processing services and turnkey systems to credit unions across the U.S.
  - EFT Data Services, headquartered in New York (NY), provides processing services for check and credit card authorizations.
  - Quorum Systems, Inc., headquartered in Plymouth Meeting (PA), provides processing services, software products, and turnkey systems to over 400 law firms and corporate legal departments for financial management, accounting, word processing, and litigation support.
  - REDINET Services, headquartered in Greenwich (CT), provides electronic data interchange (EDI) services.
  - Doane Information Services, headquartered in Bloomington (MN), provides application software products to the agricultural industry.

#### *Computer Products:*

Computer Products provides and integrates high-performance computer-based solutions and services for scientific, engineering, and complex information management markets. Its high-performance computers include CYBER 910 workstations and the CYBER 900 family of mainframes.

- Computer Products' Technical Services unit provides maintenance services for products manufactured by CDC worldwide and other computer manufacturers in the U.S.

#### *Energy Management:*

Headquartered in Plymouth (MN), Energy Management integrates large systems for electric utilities that manage and control the generation, transmission, and distribution of electric power.

*Government Systems:*

Headquartered in Bloomington (MN), Government Systems supplies computer systems, hardware, software, and related services to the U.S. Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and similar agencies of U.S. allies. Government Systems is also a prime contractor and systems integrator. Government Systems currently has approximately 800 contracts in force.

*VTC Incorporated:*

VTC Incorporated, a CDC subsidiary headquartered in Bloomington (MN), develops, manufactures, and markets high-performance integrated circuits using CMOS and bipolar technologies. It serves CDC Computer Products, Government Systems, and the worldwide merchant market.

Marketing agreements announced by CDC include the following:

- In June 1989, CDC announced that it will sell Convex Computer Corporation's C series supercomputers. The agreement will make CDC the exclusive distributor in some non-U.S. markets. Domestically, CDC will be the prime systems integrator in CYBER mainframe/C series installations in some vertical and geographic markets.
- In May 1989, CDC announced a joint marketing agreement with Cray Research, Inc. under which CDC will "have access to a broader base of customers with large or complex computing needs and be able to offer customers alternatives that help them meet their supercomputing requirements."

As of December 31, 1988, CDC had approximately 33,500 employees. The company currently has approximately 30,000 employees, including 8,500 from Imprimis (whose sale is still pending).

CDC information services competitors include the following:

- General and business processing services: Interactive Data Corporation (Dun & Bradstreet), McDonnell Douglas Information Systems Company, ADP Network Services, Infonet, and GE Information Services.
- Engineering and scientific products: GE Information Services, McDonnell Douglas Information Systems Company, and Boeing Computer Services.

- Computer integrated manufacturing products and services: IBM, Computervision/Prime, Intergraph, Calma (Prime), and Applicon.
- Ticket reservation services: TicketMaster, Datatec, Ticketworld, BASS, and Select a Seat.
- Automated wagering: GTECH, Bally, and General Instruments.
- Energy management systems integration: Ferranti, Landis and Gyr Systems, Inc., and Harris.
- Government systems integration: the top ten defense contractors.

**Key Products and Services**

A three-year summary of source of revenue, as provided by CDC, follows:

**CONTROL DATA CORPORATION  
THREE-YEAR SOURCE OF REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					
	1988		1987		1986	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Computer Systems & Services (a)	\$1,198.8	33%	\$1,314.4	39%	\$1,293.2	38%
Imprimis/Data Storage Products	1,146.0	32%	974.5	29%	1,045.6	31%
Information Services Group						
- Business Services (b)	715.9	20%	514.3	15%	445.6	13%
- Ticketron	129.3	3%	122.8	4%	122.0	4%
- Training and Education	64.3	2%	61.1	2%	95.7	3%
Subtotal	909.5	25%	698.2	21%	663.3	20%
Government Systems	339.1	9%	354.4	10%	341.6	10%
Other (c)	34.9	1%	25.0	1%	13.0	--
<b>TOTAL</b>	<b>\$3,628.3</b>	<b>100%</b>	<b>\$3,366.5</b>	<b>100%</b>	<b>\$3,346.7</b>	<b>100%</b>

- (a) Includes CYBER systems, ETA Systems, Technical Services, Energy Management, computer-integrated manufacturing products, and SIS remote computing services.
- (b) Includes Arbitron, Business Management Services, Micrognosis, Data Services, and Action Data Services.
- (c) Primarily VTC.

INPUT estimates that of CDC's \$3.6 billion in 1988 revenue, approximately \$1.1 billion was derived from its various information services activities, including the operations of the Information Services Group, the systems integration business of Energy Management and Government Systems, computer-integrated manufacturing products and services, and SIS processing. A further breakdown of CDC's worldwide information services revenue for 1988 is estimated as follows:

Processing/network services	58%
Systems integration	16%
Turnkey systems	11%
Software products	8%
Professional services	<u>7%</u>
(including education and training)	100%

CDC states that approximately 80% (over \$570 million) of its Business Services' revenue is derived from Arbitron, Micrognosis, and Business Management Services.

In spite of the divestiture of several information services businesses late in 1988 and during 1989 (as previously described), it is estimated that CDC's 1989 information services revenue will approximate \$1.1 billion. The expansion of Arbitron, together with increased revenue in the systems integration and payroll processing businesses, will contribute to information services revenue growth during 1989.

### **Industry Markets**

Revenues from various U.S. government agencies were approximately \$406 million (11% of revenue) in 1988, \$470 million (14% of revenue) in 1987, and \$491 million (15% of revenue) in 1986.

Information services clients include advertisers and broadcasters, financial services firms (including banks, securities firms, insurance companies, and credit unions), corporate treasury departments, federal and state governments, electric utilities, manufacturers, distributors, general businesses, hotels, airlines, legal firms and corporate legal departments, farmers, and consumers.

### **Geographic Markets**

A three-year summary of source of revenue follows:

**CONTROL DATA CORPORATION**  
**THREE-YEAR GEOGRAPHIC SOURCE OF REVENUE SUMMARY**  
**(\$ millions)**

ITEM	FISCAL YEAR					
	1988		1987		1986	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
U.S.	\$3,088.3	85%	\$2,692.8	80%	\$2,723.2	81%
International	1,083.0	30%	1,188.2	35%	1,087.5	32%
(Eliminations)	(543.0)	(15%)	(514.5)	(15%)	(464.0)	(13%)
<b>TOTAL</b>	<b>\$3,628.3</b>	<b>100%</b>	<b>\$3,366.5</b>	<b>100%</b>	<b>\$3,346.7</b>	<b>100%</b>

An estimated 85% of CDC's 1988 information services revenue was derived from the U.S. and 15% from international sources.

Fred Metry  
Cushman (612) 853-3576

Bill Schaeffer, PR Director  
(612) 853-5748  
Dick Warner SOC  
Dave Lindsay, Cushman Person  
(612) 853-4892

## COMPANY HIGHLIGHT

Connie Andrus, Auditor  
Bill Schmidt, Ticketman

### CONTROL DATA CORPORATION

Services Company  
8100 34th Avenue South  
Minneapolis, MN 55440  
(612) 853-8100

Henry J. White, President  
Division of Control Data Corporation  
Data Services Revenues, Fiscal  
Year End 12/31/79: \$474,000,000

### THE COMPANY

- Control Data Corporation (CDC) has been providing computing services since 1961. Thirteen of the CDC operations that offer computer services are organized in a division called the Services Company.
- According to the company's 10K report, the computer services portion of CDC's business contributed about \$886 million to the company's total revenues of \$3.3 billion in 1979, or 27%. This is the same proportion as in 1978. Approximately \$412 million of the \$886 million was received from educational, consulting and equipment maintenance services. The remaining \$474 million was derived from the operating units of the Services Company.
- In 1980, CDC transferred an operational unit from its Computer Systems group into the Services Company. Although INPUT could not receive corporate verification of the unit involved in the transfer, we believe it was Professional Services. The following financial summary includes revenues of the new unit for the last three years. Revenues for 1975 and 1976 are for the original 12 organizational units.

CDC  
SERVICES COMPANY  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ Millions, Numbers Approximate)

ITEM \ FISCAL YEAR	FISCAL YEAR				
	1979	1978	1977	1976	1975
Total revenues	\$474	\$408	\$340	\$247	\$221
Percent increase from previous year	16%	20%	38%*	12%*	41%*

\* Includes revenue growth from unit transferred.

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- INPUT estimates that revenues from the five major operating units of the Services Company are distributed as follows:

Service Bureau Company	43.0%	\$204
Cybernet	30.0	142
Professional Services	10.5	50
Arbitron	10.0	47
Ticketron	6.5	31
	<u>100%</u>	<u>474</u>

- The reporting relationship of all operating units is presented in Exhibit A.

### KEY PRODUCTS AND SERVICES

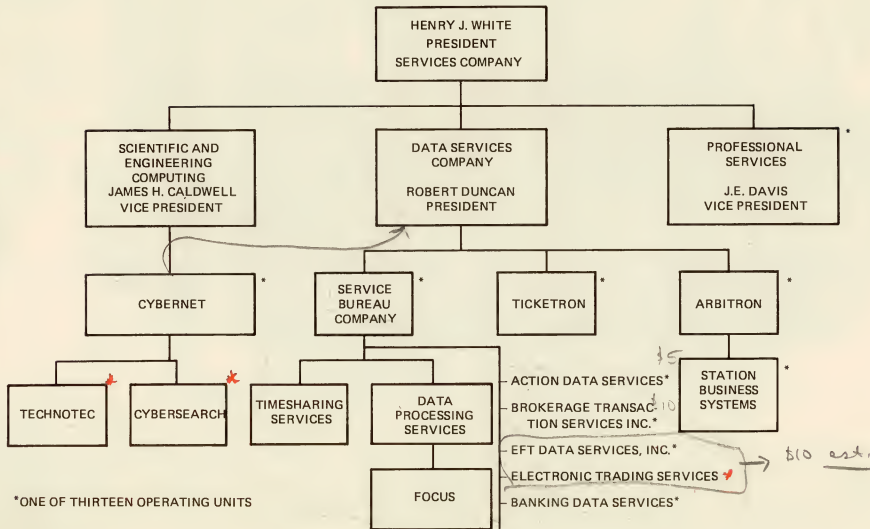
- INPUT estimates about 89.5% of CDC's Services revenues are derived from processing services and 10.5% comes from professional services. Although turnkey systems are marketed by several organizations, these have not had a significant impact on total revenues.
- The Service Bureau Company (SBC) is organized into two primary divisions: SBC Timesharing and SBC DPS (which provides batch and credit union services). Banking Data Services is a smaller division. SBC also includes four operating subsidiaries: Brokerage, ACTION, EFT and Electronic Trading. INPUT estimates SBC's 1979 revenues as follows:

SBC Timesharing	45%	92	180
SBC DPS	44	90	120
Other groups	<u>11</u>	<u>22</u>	
	100%	<u>204</u>	

- SBC's Timesharing Service organization provides remote computing services from a data center in Cleveland. Timesharing services are marketed outside the U.S. by Control Data personnel in Western Europe, Canada, Japan, Hong Kong and Australia.
- Areas of specialization on SBC's network are data bases, financial modeling/planning tools, and applications for the banking and securities industries. Recent additions to the network include:
  - A new modeling service, linked to the Evans Economic macroeconomic model, that will permit simultaneous forecasting. Called a multiple "satellite economic" system, it will include financial, industrial production, producer prices, agriculture and international data.
  - Insurance Industry Data Base, a comprehensive collection of insurance industry financial information obtained

EXHIBIT A

CDC SERVICES COMPANY



## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

from annual statements filed by all insurers with state regulatory commissions.

- Hospital Planning Model (HPM), for strategic long-range hospital financial planning.
- BANKSAFE, a comparative analysis of commercial bank financial ratios that uses FDIC data.
- Products experiencing high growth rates are X/L, a data base management system, and PICTURE-PAC, a graphics package which produces a variety of plots, charts and graphs on conventional timesharing terminals.
- Other leading products on the network are PROFIT II and MINIMIS. A profile of applications offered is presented in Exhibit B.
- In December 1979, SBC began offering customers of its timesharing service a Touch-Tone telephone capability for obtaining replies from a computerized voice synthesizer connected to the SBC data center. Its primary use will be for cash management reporting services.
- The Data Processing Services (DPS) group provides batch and on-line services for general business applications and credit unions.
- Batch processing and remote data entry services are provided from 34 data centers in the U.S.
- Major applications available include payroll, general ledger, accounts receivable/payable, sales analysis, job costing, personnel and financial analysis.
- Since March 1980, DPS has been test marketing a minicomputer system for general business use called the Control Business System. The system operates in a standalone environment and offers applications for order entry and billing, inventory control, accounts receivable and sales, purchase order control, accounts payable, general ledger and payroll.
- The Control Business System is offered in four upgradeable models using Data General ECLIPSE minicomputers and CDC peripherals.
- Test market sites for the Central Business System are in New York, Chicago, Los Angeles, Houston and Philadelphia.

*Philadelphia  
how is it doing*

# COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

## EXHIBIT B

### SBC NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT                             <ul style="list-style-type: none"> <li>– IBM 303X, 370, CALL 370, CALL PLUS</li> </ul> </li> <li>• PROGRAMMING LANGUAGES SUPPORTED                             <ul style="list-style-type: none"> <li>– BASIC</li> <li>– FORTRAN</li> <li>– PL/1</li> <li>– SIMSCRIPT 11.5</li> </ul> </li> <li>• DATA MANAGEMENT SOFTWARE                             <ul style="list-style-type: none"> <li>– EASYTRIEVE</li> <li>– MINI-MIS EXTENDED (MMX)</li> <li>– MARK IV</li> <li>– X/L</li> </ul> </li> <li>• DATA BASES AVAILABLE                             <ul style="list-style-type: none"> <li>– BANKANAL (BANK FINANCIALS)</li> <li>– COMPUSTAT, EARLYOPT, VALPORT, EXSTAT, MISTI (SECURITIES DATA)</li> <li>– EURABANK (NON-U.S. BANK FINANCIALS)</li> <li>– EURARATE (CURRENCY CONVERSION)</li> <li>– FDIC/FSLIC/NCVA</li> <li>– MUNIPRICE (MUNICIPAL BONDS)</li> <li>– FINB (FINANCIAL INSTITUTIONS)</li> <li>– FAPRS (GOVERNMENT LOANS, GRANTS)</li> <li>– EVANS ECONOMIC FORECASTING SERVICE</li> <li>– SITE II (DEMOGRAPHIC AND HOUSING)</li> <li>– DRI CAPSULE DATA BASE</li> <li>– ORR (CONSTRUCTION ESTIMATING)</li> <li>– LIFE RATES DATA BASE</li> <li>– SITE II POTENTIAL</li> <li>– INSURANCE INDUSTRY DATA BASE</li> <li>– X/MARKET</li> </ul> </li> <li>• FINANCIAL APPLICATIONS/TOOLS                             <ul style="list-style-type: none"> <li>– PROPHIT II (PLANNING/MODELING)</li> <li>– TIMEPACK II (TIME SERIES)</li> <li>– RISKAN II (RISK ANALYSIS)</li> <li>– PICTURE-PAC (PLOTING/GRAPHICS)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• BANKING                             <ul style="list-style-type: none"> <li>– CERTIFICATE OF DEPOSIT (CDCOM)</li> <li>– DEBIT BANK SYSTEM</li> <li>– DOMESTIC FUNDS TRADING (DFTS)</li> <li>– FOREIGN EXCHANGE, LOANS, DEPOSITS</li> <li>– SAVINGS AND LOAN MODELS</li> <li>– BANK SAFE (FINANCIAL RATIOS)</li> </ul> </li> <li>• SECURITIES                             <ul style="list-style-type: none"> <li>– ASSET, BASIS, BOND/NOTE PRICING, BONDSPWAP, DEBIT, REFUND</li> <li>– MUNICIPAL BONDS (BID, MBOFFER)</li> <li>– PORTFOLIO MANAGEMENT (OPSCREEN)</li> <li>– FINANCIAL PLANNING (EXECPLAN)</li> </ul> </li> <li>• INSURANCE                             <ul style="list-style-type: none"> <li>– MUFU LIFE INSURANCE SERVICES</li> <li>– PENSION PLAN APPLICATIONS</li> <li>– TAXMOD (LIFE INSURANCE MODEL)</li> </ul> </li> <li>• MANUFACTURING                             <ul style="list-style-type: none"> <li>– ESCORT (ORDER ENTRY/CONFIRMATION)</li> <li>– MFG/PLUS (MATERIAL REQUIREMENTS)</li> </ul> </li> <li>• CREDIT UNIONS*                             <ul style="list-style-type: none"> <li>– FOCUS (SHARE AND LOAN ACCOUNTING)*</li> </ul> </li> <li>• MATHEMATICAL                             <ul style="list-style-type: none"> <li>– MATH-AIDS</li> <li>– MIDILPD</li> <li>– MPSX</li> </ul> </li> <li>• STATISTICAL                             <ul style="list-style-type: none"> <li>– DATA PACK, STATPACK, SAS (STATISTICAL ANALYSIS)</li> <li>– APL STATISTICAL LIBRARY</li> <li>– BMD/BMDP BIOMEDICAL PROGRAMS</li> <li>– GPSS-V (SIMULATION)</li> </ul> </li> </ul>

\*AVAILABLE FROM CAMPBELL (CA) DATA CENTER

- . Credit union services are provided through the DPS FOCUS organization. With over 1,700 credit union clients, SBC is the largest supplier of data processing services to credit unions.
- Credit union services are marketed through five service options.
  - . FOCUS II, a batch service.
  - . FOCUS 300, an on-line service offered with fewer functions and at a reduced cost for smaller credit unions.
  - . FOCUS IV, an on-line service offered at a reduced price when used during non-prime time.
  - . FOCUS On-line, the complete on-line version with no price reductions.
  - . FOCUS ONE, a standalone minicomputer system for use in large credit unions.
- Approximately 1,100 of SBC's 1,700 credit union clients use the FOCUS batch services and the remaining 600 use one of the on-line services.
- Applications available in both the batch and on-line versions of FOCUS are:
  - . Share draft and loan draft processing.
  - . Automated share and loan postings.
  - . General ledger and financial reporting services.
  - . Check preparation.
  - . Delinquency notices and management reports.
  - . EFTS funds deposit (on-line service).
  - . VISA credit card support (on-line service).
- All on-line services to credit unions are provided from a data center in Campbell (CA). Batch services are provided from 23 of the 34 data centers operated by SBC.
- FOCUS ONE, the standalone version for credit unions, was installed at the first client location in April 1980. Orders have been signed to install five to six additional systems in the fourth quarter of 1980.
  - . FOCUS ONE operates on an IBM Series I and ranges in price from \$150,000-\$750,000 depending on software and peripherals required.

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- Although FOCUS ONE is practical for use in credit unions with as few as 4,000-5,000 members, SBC expects to install the majority of systems in organizations with 10,000-20,000 members or more.
  - Additional capabilities planned for FOCUS ONE will be VISA credit card support, ATM support and an audio-response bill payment system.
- The Banking Data Services group provides batch services with an on-line inquiry capability from a data center in Los Angeles. At the present time its services are only offered in California.
  - The majority of clients are small- to medium-sized independent banks.
  - Applications available include:
    - General ledger.
    - Installment loans.
    - Commercial loans.
    - Demand Deposit.
    - Central Information File.
    - Savings Accounting: time certificates, time deposit, club savings and regular savings.
    - NOW Accounting.
- Brokerage Transaction Services, Inc. (BTSI) has been providing processing services to the brokerage industry since 1970.
  - Its front office system links brokerage firm branch offices to trading locations for stock executions in real-time.
  - Back office services are provided for accounting, stock and bond transactions executed during the day, bookkeeping, margin accounting and specialized functions for the cashiers department.
  - Approximately 100 brokerage houses and a few banks use the BTSI system.
  - The BTSI data center and headquarters are in New York. There are approximately 200 employees.
- ACTION Data Services, based in St. Louis, provides on-line processing services to the consumer finance industry. Offered on a nationwide basis, ACTION has over 130 clients on the system.
  - Applications available include certificate of deposit, passbook accounts and loan processing. An open-end lending system will be available in 1981.

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- ACTION maintains one office in St. Louis and employs about 100 people.
- EFT Data Services, Inc., based in Greenwich (CT), provides payment authorization services to commercial banks which in turn market the service to retail merchants.
  - EFT's TeleMoney Service enables commercial banks to provide point-of-sale check verification, check guarantee and credit card authorization services. Retail outlets are connected via terminals to the TeleMoney on-line transaction system.
- Electronic Trading Services (ETS), based in Jersey City, markets a national electronic securities market system. The on-line service allows brokers and market makers to instantaneously execute purchases and sales of securities.

*\$142 million*  
CYBERNET provides a range of scientific and engineering application services from five U.S. and Canadian data centers and 11 overseas locations. INPUT estimates CYBERNET contributes about 30% of the total Services Company revenues. An estimated \$90 million of Cybernet's revenues comes from U.S. and Canadian clients.

- Applications on the network are used to solve technical problems in architecture, engineering, construction, nuclear and electric utilities, manufacturing, energy conservation, petroleum, mining and government.
  - A profile of applications available on CYBERNET is presented in Exhibit C.
  - New applications added to the network are:
    - Structural analysis (FASOR, ABAQUS, PAFEC).
    - Interactive Pattern Analysis for the petroleum industry.
    - Statistical (PSTAT).
    - Nuclear (RETRAN).
    - Electronics (DEELAY and DIANA).
- Offered on the CYBERNET network are the services of the TECHNO-TEC and CYBERSEARCH organizations.
  - TECHNOTE is a computer-based technology exchange service which brings together those who need technology with those who have technology.
  - CYBERSEARCH is a computerized recruiting and staffing service that matches professional employees to the needs of employers.

# COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

## EXHIBIT C

### CYBERNET NETWORK PROFILE

#### APPLICATION AREA/PRODUCT NAME

- OPERATING ENVIRONMENT
  - CDC CYBER 170 AND 200/NOS, SCOPE
- PROGRAMMING LANGUAGES SUPPORTED
  - ALGOL, APL, BASIC, COBOL, COMPASS, FORTRAN, SIMULA, SIMSCRIPT
- DATA MANAGEMENT SOFTWARE
  - BASIS - SKILTEC
  - IPF - SYSTEM 2000
  - IS/ATHENA - TOTAL
  - LEXITEC - TOTAL/ATHENA
- DATA BASES AVAILABLE
  - CEDA - TECHNOTE
  - EBS
- MANAGEMENT SCIENCES
  - APEX III - PPS IV
  - DCO/TRANPLAN - PROLAN
  - EZPERT - PROSE
  - GPSS V - PSTAT
  - IMSL - SIMSCRIPT 11.5
  - NETFLOW II - SIR
  - PDS/MaGen - SPSS
- FINANCIAL APPLICATIONS
  - ASCENT SYSTEM
  - IFPS
  - SIBYL/RUNNER
- CIVIL ENGINEERING
  - BARS - SPAM
  - CELS - SPSTRESS
  - DESCUS - STRU-PAK
  - FAAST - SURNAL
  - GTICES/STRUDL - SYSTEMS PROFESSIONAL
  - POSTEN
- ELECTRONICS
  - ACSL - DIANA
  - ARRAYGEN - MICROLIB
  - CC-TEGAS3 - PREDICTOR
  - CDC-SPICE2 - RESULTS
  - CSSL - RFOP
  - DELAY - SYSCAP II
- ENERGY CONSERVATION
  - BLAST - FCHART
  - CALERDA - RSPV
  - ECUBE - SOLCOST
  - EP - TRNSYS
- GRAPHICS
  - DISSPLA - SACM
  - PERSPECTIVE - SURFACE-MAP
  - PLOT/PAC - TIGS
  - PLOT-10 - UNIPLOT
- MACHINERY
  - CADENSE - SDRC/SUPERTAB
  - MITAS II - SINDA-9
  - SDRC/IMP - THERMAL
  - SDRC/MDL - TRASY
  - SDRC/SUPERB

#### APPLICATION AREA/PRODUCT NAME

- NUCLEAR FUEL MANAGEMENT
  - ARMP - LEAHS
  - CITATION - PDQ7/LEAHSV2
- OPTICAL SCIENCES
  - OPTICAL SCIENCE LIBRARY
- PETROLEUM AND MINING
  - GOLOG, GRAPH, MULTI-LITH
  - MINEVAL, MSCDES
  - SSI/100
  - SSTRAN, MTRAN, HCOMP, TRANSFLOW, TLIG, TCON
  - STAMOR
  - INTERACTIVE PATTERN ANALYSIS
- PIPING ANALYSIS
  - AAA-T - NUPIPE
  - ADLPIPE - PIPERUP, PRTHRUST
  - CAPIM - PIPESD
  - DIS - PIPLIN II
  - EZFLEX - WAVENET
  - HANGIT
- POWER SYSTEMS OPERATIONS AND DESIGN
  - COMMIT - PROCOS II
  - HEAT RATE CURVE - SYNFE
  - MEVAL - SYNTHA II
- POWER SYSTEMS PLANNING
  - EMTRAN - SSR
  - POWER FLOW - STABILITY
  - SCAN
- RADIATION SHIELDING AND CRITICALITY
  - AMPX - KENO-IV
  - ANISN - MORSE-CG
  - DOT 3.5 - SPAN-4
  - DOT IV
- REACTOR OPERATIONS SUPPORT
  - NIPS - PREM
- REACTOR SAFETY ANALYSIS
  - COBRA IV - HYDROMIX
  - CONTEMPT-LT - PISCES
  - DYNODE-2 - RELAP4/REPIPE
  - FLUSH - WREM
  - GALE
- STRUCTURAL ANALYSIS
  - ADINA - MARC-CDC
  - ANSYS - PAFEC
  - ARGUS - SACS
  - CDC/NASTRAN - SAMBAS
  - EAC/EASE2 - STARDYNE
  - FASOR - UNISTRUC
  - ABAQUS
- TELECOMMUNICATIONS
  - CDCSAVE - NPJA
  - CNET - PWAC
  - COMNET - TELTAPS
- OTHER
  - CYBERSEARCH

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- <sup>\$47</sup> Arbitron, established in 1949, was acquired in 1967 by CDC as part of the CEIR acquisition. Revenues from Arbitron, including its Station Business Systems division, are estimated by INPUT to be about 10% of the total Services revenues.
  - Headquartered in New York, Arbitron operates two data centers in Rockville and Beltsville (MD) that collect, analyze and prepare reports on the viewing and listening habits of the general public.
    - Audience measurement services are provided to approximately 4,500 clients. Included are 550 of the country's 800 television stations, 1,500 out of 8,000 radio stations, and 2,500 other advertisers and advertising agencies.
    - Data on viewing and listening habits are collected through diaries and, for some television audiences, through metering devices.
      - Meters are installed in households to collect and store tuning information. The units are polled overnight and data is collected in the Beltsville center.
      - Arbitron metering services are available in New York, Chicago and Los Angeles. San Francisco will be operational in the fall of 1981. There are 350-450 meters installed in each city.
    - Most information from Arbitron is delivered through printed reports. However, an on-line data base service called Arbitron Information on Demand, is available. Arbitron anticipates the printed reports will eventually be eliminated in favor of on-line access to the data base.
    - Arbitron employs about 700 full-time personnel and 3,100 part-time field personnel.
  - Station Business Systems, formerly CompuNet, was founded in 1969 as a joint venture of Control Data Corporation and Bank of America. In 1975, Control Data bought out Bank of America's shareholding. CompuNet's name was changed to Station Business Systems in 1977. In 1978, Station Business Systems purchased and merged Paperwork Systems into its organization. Paperwork Systems, formerly located in Bellingham (WA), provided broadcast, billing and trafficking systems.
    - Station Business Systems markets three turnkey products for radio, television stations and cable television franchises. Approximately 90% of its customers are radio stations, although television stations are viewed as a growth market.

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- The Billing Accounting and Traffic (BAT) system is marketed to radio and television stations. It is sold on Datapoint 6600s or ARC systems and offers applications for business functions.
  - Applications available include full accounting (GL, AP, AR), inventory management and scheduling. It also has the capability of interfacing with process control computers.
  - There are 225 BAT systems installed serving 350 stations.
  - Price of a system ranges from \$30,000-\$90,000. An average system sells for \$50,000.
- The Subscription Billing System was introduced in late 1979 for cable television franchises. Applications available include subscriber billing, inventory management and a service scheduling capability. Accounts receivable, general ledger and payables are in development. Two models of the Subscription Billing System are available.
  - Model 1000 is a batch system which uses Datapoint hardware. It ranges in price from \$15,000-\$40,000.
  - Model 2000 uses Texas Instrument 990s and is marketed to stations with 20,000 subscribers or more. It sells for \$70,000-\$250,000.
  - As of October 1, 1980, there were 11 cable television franchises.
- Station Business System's latest product is NEWSKOM, a turnkey system for television news rooms. NEWSKOM performs word processing functions for writing and editing news stories, capture of wire service data, a production facility to assemble newscasts, an assignment desk capability and an archival capability. It also interfaces to electronic prompting.
  - It is sold on Datapoint ARC systems and is priced between \$100,000-\$250,000. Two systems have been installed in test sites.
- *\$21 million* Ticketron, with data centers in Hackensack (NJ) and Los Angeles, provides automated reservations and ticketing for theaters, concerts, sporting events and camping. Serving the U.S. and Canada (Ticket Reservations Systems of Canada, Ltd.), Ticketron estimates it will process 42 million tickets by the end of 1980. INPUT estimates it contributed about 6.5% of the Services Company revenues.
- Ticketron markets two standalone systems for the automation of accounting functions and ticketing operations of sports teams, universities and entertainment groups. Both systems use Cyber 18-20 mainframes and are sold on a lease basis.

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- Ticketron 2000, using a floppy disk memory, leases for \$37,000 a year.
- Ticketron 2001, sold with a larger disk capacity, leases for \$57,000 a year.
- Approximately 20 of the standalone systems have been installed.
- Ticketron's Automated Wagering Division maintains a separate data center in upstate New York to operate the state's off-track-betting system.
- The Division also provides processing support for automated lottery systems in the states of Pennsylvania, Maryland, Delaware, Illinois and New York. With the exception of Delaware, separate data centers are maintained for the lottery systems.
- Within the last year, World Airways signed a contract to sell airline tickets through the Ticketron system. The company views this as an opportunity to market similar services to other airlines.
- INPUT believes the remaining 10.5% of the Services Company revenues were derived from Professional Services.

*\$50 million*

**INDUSTRY MARKETS** The Services Company derives revenues from every industry sector. Primary industries served are banking and financial, manufacturing, utilities, government and petroleum.

## COMPUTER HARDWARE AND SOFTWARE

- North American data center locations for CYBERNET services are in Minneapolis, Rockville, Houston, Sunnyvale and Toronto, Canada. International centers are in London, Paris, Brussels, Stockholm, Frankfurt, Melbourne, Johannesburg, Tel Aviv, Mexico City, Rijnsijk (Holland), Tokyo and Rio de Janeiro. Mainframes used in the centers are primarily CYBER 170s with NOS and SCOPE operating systems.
- The SBC remote computing service center in Cleveland uses IBM 370/158 and 303X equipment with the CALL 370 and CALL PLUS operating system. CALL 370 uses a custom operating system and CALL PLUS uses MVS. The Campbell (CA) data center uses an IBM 370/158 and CDC Omega 480s. The SBC batch data centers use a combination of IBM 360/370 equipment.
- The ACTION data center in St. Louis has an IBM 370/158 installed.

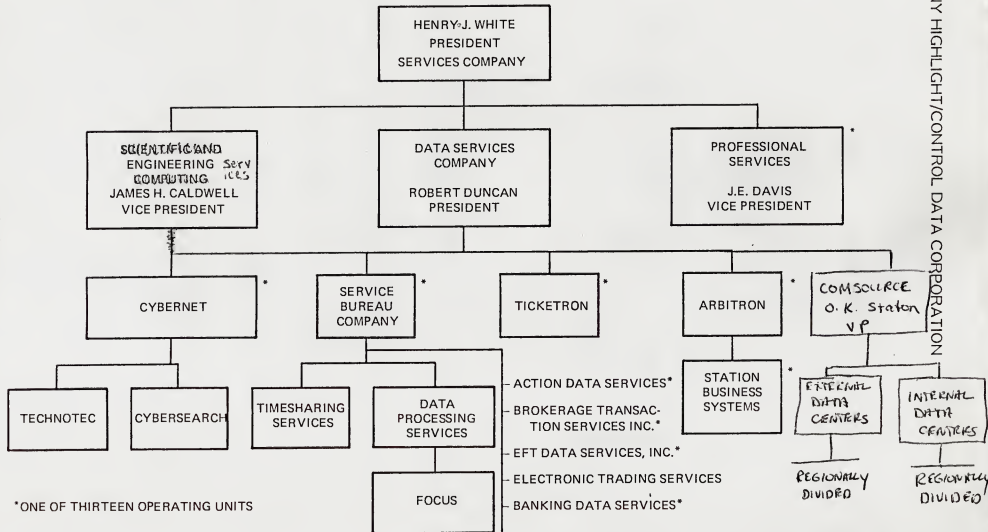
## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- Ticketron operates data centers in Los Angeles and New York for its reservation system. Equipment installed consists of Cyber 18s. Data centers for the Automated Wagging Division are in New York, Pennsylvania, Maryland, and Illinois.
- Arbitron's Beltsville (MD) center has twin CDC 3500s and a CDC 1700. The Rockville center uses a CYBER 175.
- Brokerage Transaction Services Inc. will be consolidating its two New York data centers into one facility next year. BTSI uses CDC Omega 480-III's.



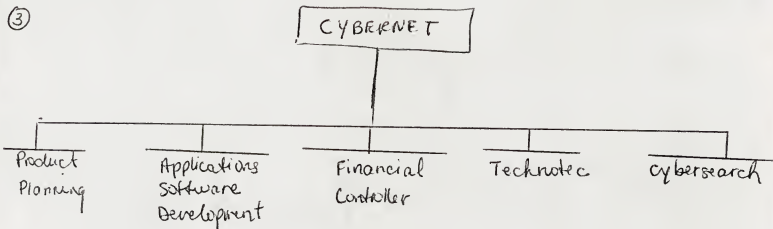
# EXHIBIT A

## CDC SERVICES COMPANY



COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- ① Cybernet reports on same level as SBC to Data Services
- ② Engineering Services includes all corporate maintenance, including comm



- ④ Marketing, sales, and all other functions are handled centrally at a level equal to H. J. White.
- ⑤ All US data centers report to the CONSOURCE unit. There is an external (Cybernet, SBC, etc) and internal (payroll, development, etc) unit. This reports at same level as cybernet. Each unit is divided by region.
- ⑥ Each European country has an identical operating system with the data centers reporting to CONSOURCE in its country. The whole reports into COC corporate. Station has input but no control over European data centers.

*Munday 50*  
**INPUT**

2471 EAST BAYSHORE ROAD, SUITE 600, PALO ALTO, CA 94303 (415) 493-1600

April 15, 1981

Mr. Bill Schaffer  
Public Relations  
CONTROL DATA CORPORATION  
P.O. Box 0  
Minneapolis, MN 55440

Dear Bill:

I have been threatening to send this to you for weeks and finally mustered the courage to face these numbers.

I need to clarify the revenue numbers from CDC's Data Services group for publication in a list INPUT is preparing of the Largest Vendors of Computer Services and for publication in a revised Highlight on CDC.

Enclosed are:

- The 1979 INPUT Directory of the Largest Computer Services Companies (numbers exclude foreign revenue and turnkey system sales).
- Notes on how we derived the 1979 numbers.
- Notes and problems with the 1980 numbers.
- Our work sheet to compare 1979 and 1980 numbers for the Largest Vendor list.

I am aware that you may not be able to provide exact numbers for some of the categories. Estimates are acceptable.

If possible, I would like to call you around April 28 to go over the data. Thanks for your cooperation.

Sincerely,

*Joann*

Joann M. Jackson  
Manager, Company Analysis and Monitoring Program

JMJ/el  
Encl.

P.S. My advice: don't read the attachments now. Throw this in your briefcase and read it over a cocktail at home. You'll be in a better frame of mind.





April 28, 1981

RECEIVED  
MAY 04 1981  
PALO ALTO

Ms. Joann M. Jackson  
INPUT  
2471 East Bayshore Road  
Suite 600  
Palo Alto, CA 94303

Dear Joann:

Let me try once more to clarify the legendary Control Data numbers issue:

1. Exhibit V-1, listing largest vendors, should carry a 1979 figure of \$520 million for CDC. You'll see how that's derived in the following.
2. Your explanation sheet needs some refinement. The Data Services number (\$424) should be \$469 and the Professional Services number (\$50) should be \$55. Your estimate for software products is your own. We don't disclose and therefore cannot comment on its veracity.

Same with turnkey systems. Don't disclose. Can't comment.

Leaving international revenue alone, the total U.S. services revenues are \$520 million.

3. Your 1980 Estimates sheet: We don't disclose, and can't comment on, software products and turnkey systems revenues. The International number (listed at \$100) should be \$80, leaving a new \$614.
4. Your "Problem with 1980" sheet: The \$1.035 million is an organizational total including some sales and rental revenues. The \$981 figure reports type of revenue -- services revenues only. No, the \$54 million difference is not intersegment revenues.

And your final paragraph doesn't apply. Hope you see why.



Ms. Joann M. Jackson  
April 28, 1981  
Page 2

Now, knowing this, can you not see how Data Services fits into our Annual Reporting scheme and can you not also see how easy it will be to complete the Input Directory sheet you attached? I will leave you to your own estimates on employees (we don't break out workers that way) and the balance of the categories.

Any questions? If not, the chair will entertain a motion for adjournment.

Best regards,

A handwritten signature in cursive script, appearing to read "Bill".

W. M. Shaffer

cc: B. Traub

1089K-9



# EXPLANATION OF HOW WE DERIVED THE 1979 NUMBERS FOR LARGEST VENDOR LIST

DATA SERVICES	<del>\$424</del> 469	
PROFESSIONAL SERVICES (E)	50	55
SOFTWARE PRODUCTS*(E)	70 <sup>55</sup>	524
	<u>\$544</u>	TOTAL

SUBTRACT

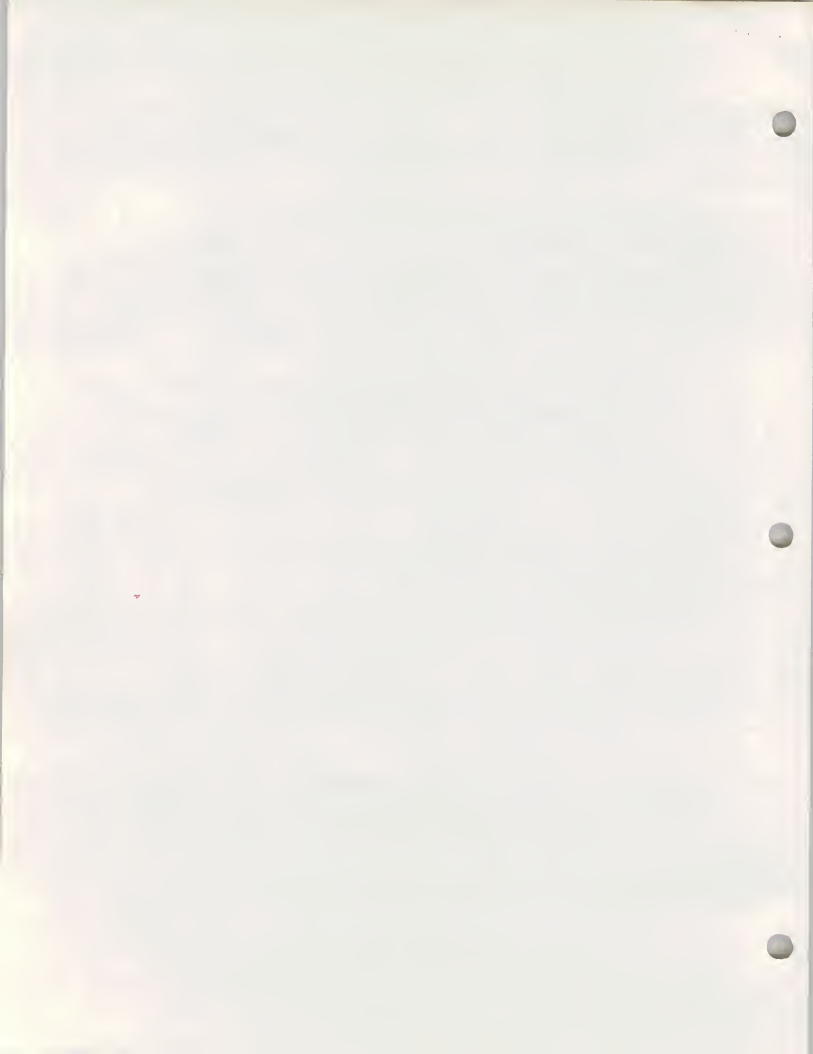
TURNKEY SYSTEMS\*\* (4)  
 INTERNATIONAL REVENUE (70)

TOTAL U.S. COMPUTER  
 SERVICE REVENUES,  
 EXCLUSIVE OF CAPTIVE  
 REVENUES

\$ 470 MILLION

\* SOFTWARE SALES & LEASES ASSOCIATED  
 WITH COMPUTER HARDWARE SALES (ESTIMATED)

\*\* TURNKEY SALES FROM STATION BUSINESS  
 & MISCELLANEOUS GROUPS (ESTIMATED)



1980 ESTIMATES (I DON'T THINK THESE ARE  
ACCURATE ... LET'S DISCUSS)

NUMBERS YOU PROVIDED:

DATA SERVICES	\$549
PROFESSIONAL SERVICES	70
	<hr/>
	\$619

INPUT ESTIMATES:

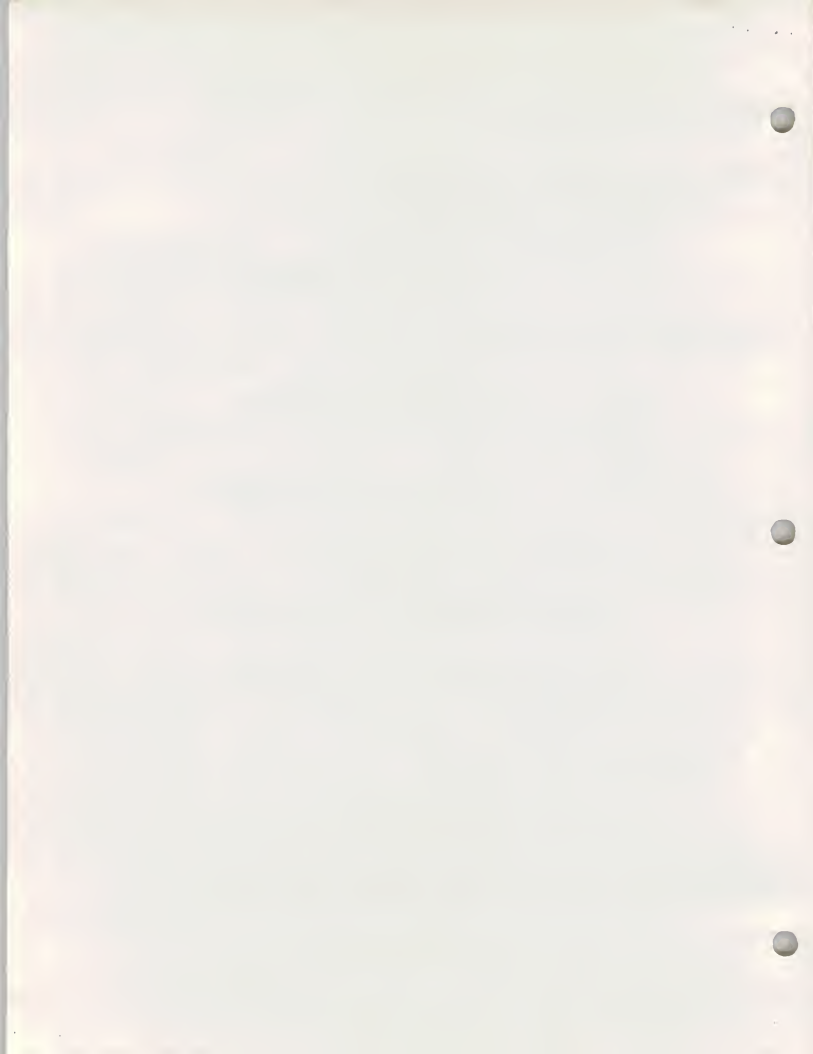
DATA SERVICES	\$549
PROFESSIONAL SERVICES	70
SOFTWARE PRODUCTS*(E)	80
	<hr/>
	\$699

SUBTRACT

TURNKEY SYSTEMS	(5)	
INTERNATIONAL	(100)	\$80

TOTAL U.S. COMPUTER	<del>\$594</del>	million
SERVICE REVENUES,	\$614	
EXCLUSIVE OF CAPTIVE		
REVENUES		

\* SOLD IN CONJUNCTION WITH HARDWARE



# PROBLEM WITH 1980 VS 1979 NUMBERS

*Don't know 100% is service related*

COMPUTER SERVICES GROUP — 1980 REVENUES		
\$424	\$549	DATA SERVICES
	313	ENGINEERING
	74	EDUCATION
	70	PROFESSIONAL SERVICES
	29	OTHER
\$50	<u>\$1.035</u>	BILLION

*includes same sales revenue*

*Includes sales & rental revenue from various units*

*\$40-45 million*

*549  
54  
495*

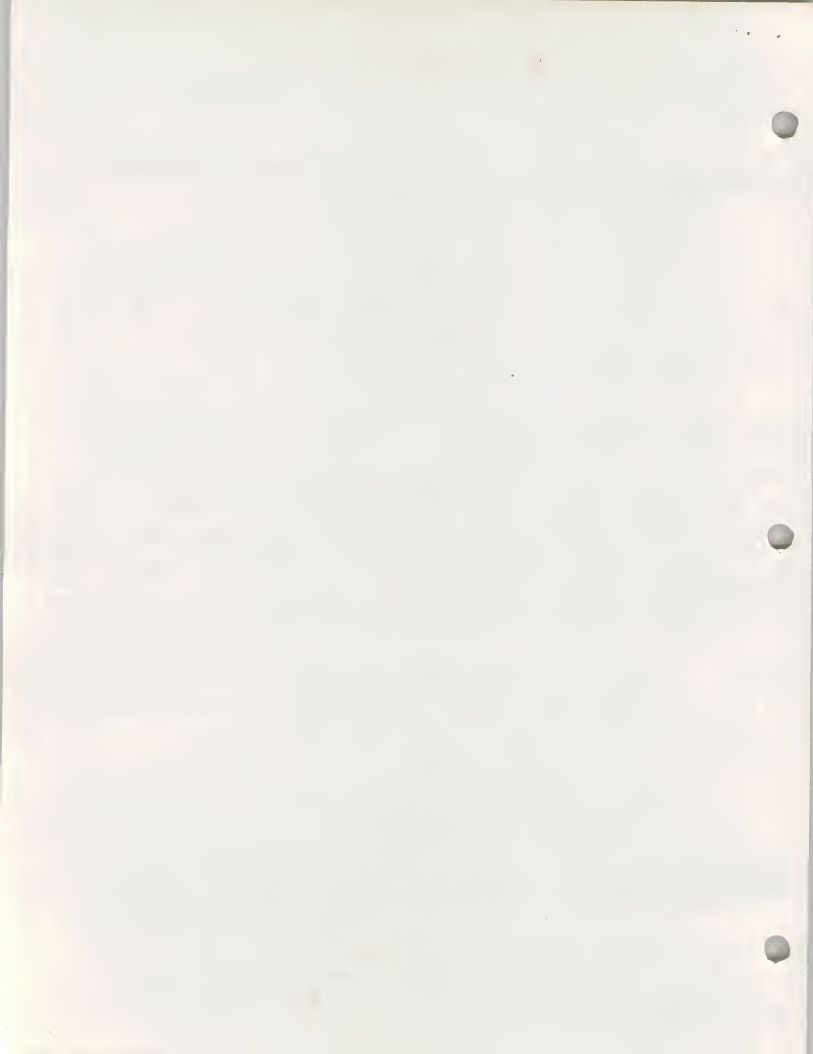
1980 CDC ANNUAL REPORT STATES TOTAL SERVICES REVENUES WERE \$981 MILLION — A DIFFERENCE OF \$54 MILLION IN THE ABOVE NUMBERS. *495 - 100 = 395*

COULD THE \$54 MILLION BE INTERSEGMENT REVENUES (WE CALL THESE CAPTIVE) FOR CYBERNET, SDC TIME SHARING OR PROFESSIONAL SERVICES? *395 + 50 = 445*

ALSO ANNUAL REPORT STATES DATA SERVICES GREW 200% IN 1980. BASED ON THE NUMBERS WE HAD LAST YEAR:

DATA SERVICES \$424  
 PROF. SERVICES 50  
 (E) \$474

1980 NUMBERS SHOULD BE \$569 MILLION (\$474 x 200%). COMPARABLE 1980 NUMBERS YOU GAVE ME ABOVE (\$549 AND \$70) WOULD ADD TO \$619 MILLION, OR A GROWTH OF 30.5%.



# CONTROL DATA CORP.

1980 REVENUE

## COMPUTER SERVICES GROUP

Data Services	\$549 M
Engineering (Maintenance & System Support)	313
Education (CDT & PLATO)	74
Professional Services	70
Other	29
	<hr/>
	1.035 <u><u>0</u></u>

100-110 U.S. Government  
100- Internal L

220-225 SBC

THE GREAT WALL

1981

CHINESE WALL

1981

CHINESE WALL

1981

CHINESE WALL

1981

CHINESE WALL

1981

CHINESE WALL

1981

CHINESE WALL

1981

SBC Estimate Co. Liquid  
 \$91 mill Camille Bros.  
 7 Communication  
 4 Gov't  
 \$100 mill.

178

Bill Warner  
 (203) 622-2044

SBC 79 \$123 mill RCS  
 only  
 no watch

# COMPANY HIGHLIGHT

**CONTROL DATA CORPORATION**  
 Data Services Company  
 8100 34th Avenue South  
 Minneapolis, MN 55440  
 (612) 853-8100

Henry J. White, President  
 Division of Control Data Corporation  
 Data Services Revenues, Fiscal  
 Year End 12/31/78: \$352,600,000

## THE COMPANY

- Control Data Corporation, (CDC) has been providing computing services since 1961. Twelve of CDC's computer services operations that offer data services are organized in a division called the Data Services Company.
- The computer services portion of CDC's business contributed approximately \$747 million to the company's total revenues of \$2.7 billion in 1978, or 27%. Approximately \$395 million of the \$747 million was received from educational services, consulting, and equipment maintenance services. The remaining \$352 million was derived from the operating units of the Data Services Company.
- Data Services revenues have grown at an AAGR of 25% for the past five years. A 17% increase in revenues was achieved in 1978 as shown in the following financial summary:

CDC  
 DATA SERVICES COMPANY  
 FIVE YEAR FINANCIAL SUMMARY  
 (\$ Millions)

ITEM \ FISCAL YEAR	1978	1977	1976	1975	1974
Total revenues	\$ 352.6	\$ 300.3	\$ 247.4	\$ 221.2	\$ 157.2
Percent increase from previous year	17%	21%	12%	41%	9%

## KEY PRODUCTS AND SERVICES

- The operating units of the Data Services Company are:
  - The Service Bureau Company (SBC).
  - SBC provides business data services from over 30 batch data centers and two remote computing centers in the U.S. Major

TOTAL RCS \$182  
 Cybernet  
 Addition  
 Action  
 Brokerage

Cybernet  
 '78 = \$120 mill.; '79 = \$144 mill.

industries served by SBC include: financial (commercial banking, savings institutions, credit unions, consumer finance, brokerage firms), insurance, manufacturing, distribution, services and government.

- The major batch data center products support general business services: payroll, accounts receivable/payable, general ledger, sales analysis, job costing, personnel and financial analysis. Several of the batch centers also have applications which support credit unions.
- Management timesharing application services are provided from an SBC center in Cleveland, Ohio. A profile of the applications available on the network is presented in Exhibit A.
- Credit union RCS services are handled from a data center in Campbell, CA. FOCUS, a comprehensive share and loan accounting system, is currently used by over 1,600 credit unions.
- In June 1979, SBC announced it would be marketing FOCUS on a minicomputer. Designed for credit unions with 4,000 or more customers, the new system is offered on an IBM Series/1 Model E with at least 128K bytes of main memory, a variety of CDC peripherals, and terminals from Lear Siegler and Texas Instruments. Called FOCUS ONE, the new system will operate on a standalone basis.
- CYBERNET provides a broad range of scientific and engineering application services from five U.S. and Canadian data centers and 11 overseas locations. Clients use these services to solve technical problems in architecture, engineering, construction, nuclear and electric utilities, manufacturing, energy conservation, petroleum, mining, and government. A profile of the CYBERNET network applications is listed in Exhibit B.
- Arbitron provides a broadcast audience measurement service for radio and television stations, cable television, and advertising agencies. Arbitron collects and analyzes data to report on the viewing and listening habits of the general public. The Arbitron data center is in Beltsville, Maryland.
- Ticketron, with data centers in Hackensack (NJ) and Los Angeles, provides automated reservations and ticketing for theaters, concerts, sporting events and camping. Serving the U.S. and Canada (Ticket Reservations Systems of Canada, Ltd.), Ticketron processed about 30 million tickets in 1978.
- In 1977, CDC released Ticketron 2000, a standalone system which automates accounting and season ticketing operations for sports teams and universities. Based on a CDC Cyber 18,

## APPENDIX A

SBC  
NETWORK PROFILE

APPLICATION AREA/PRODUCT NAME	APPLICATION AREA/PRODUCT NAME
<ul style="list-style-type: none"> <li>• OPERATING ENVIRONMENT               <ul style="list-style-type: none"> <li>– IBM 303X, 370, CALL 370, CALL PLUS</li> </ul> </li> <li>• PROGRAMMING LANGUAGES SUPPORTED               <ul style="list-style-type: none"> <li>– BASIC</li> <li>– FORTRAN</li> <li>– PL/1</li> <li>– SIMSCRIPT 11.5</li> </ul> </li> <li>• DATA MANAGEMENT SOFTWARE               <ul style="list-style-type: none"> <li>– EASYTRIEVE</li> <li>– MINI-MIS EXTENDED (MMX)</li> <li>– MARK IV</li> <li>– X/L</li> </ul> </li> <li>• DATA BASES AVAILABLE               <ul style="list-style-type: none"> <li>– BANKANAL (BANK FINANCIALS)</li> <li>– COMPUSTAT, EARLY OPT, VALPORT, EXSTAT, MISTI (SECURITIES DATA)</li> <li>– EURABANK (NON-U.S. BANK FINANCIALS)</li> <li>– EURARATE (CURRENCY CONVERSION)</li> <li>– FDIC/FSLIC/NCVA</li> <li>– MUNIPRICE (MUNICIPAL BONDS)</li> <li>– FINB (FINANCIAL INSTITUTIONS)</li> <li>– FAPRS (GOVERNMENT LOANS, GRANTS)</li> <li>– EVANS ECONOMICS</li> <li>– SITE II (DEMOGRAPHIC AND HOUSING)</li> <li>– DRI CAPSULE DATA BASE</li> <li>– ORR (CONSTRUCTION ESTIMATING)</li> <li>– LIFE RATES DATA BASE</li> </ul> </li> <li>• FINANCIAL APPLICATIONS/TOOLS               <ul style="list-style-type: none"> <li>– PROPHIT II (PLANNING/MODELING)</li> <li>– TIMEPACK II (TIME SERIES)</li> <li>– RISKAN II (RISK ANALYSIS)</li> <li>– PICTURE-PAC (PLOTING/GRAPHICS)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• BANKING               <ul style="list-style-type: none"> <li>– CERTIFICATE OF DEPOSIT (CDCOM)</li> <li>– DEBIT BANK SYSTEM</li> <li>– DOMESTIC FUNDS TRADING</li> <li>– FOREIGN EXCHANGE, LOANS, DEPOSITS</li> <li>– ST. JOSEPH PERSONAL TRUST</li> <li>– SAVINGS AND LOAN MODELS</li> </ul> </li> <li>• SECURITIES               <ul style="list-style-type: none"> <li>– ASSET, BASIS, BOND/NOTE PRICING, BONDSSWAP, DEBIT, REFUND</li> <li>– MUNICIPAL BONDS (BID, MBOFFER)</li> <li>– PORTFOLIO MANAGEMENT (OPSCREEN)</li> <li>– FINANCIAL PLANNING (EXECPLAN)</li> </ul> </li> <li>• INSURANCE               <ul style="list-style-type: none"> <li>– MUFV LIFE INSURANCE SERVICES</li> <li>– PENSION PLAN APPLICATIONS</li> <li>– TAXMOD (LIFE INSURANCE)</li> </ul> </li> <li>• MANUFACTURING               <ul style="list-style-type: none"> <li>– ESCORT (ORDER ENTRY/CONFIRMATION)</li> <li>– MFG/PLUS (MATERIAL REQUIREMENTS)</li> </ul> </li> <li>• CREDIT UNIONS*               <ul style="list-style-type: none"> <li>– FOCUS (SHARE AND LOAN ACCOUNTING)*</li> </ul> </li> <li>• MATHEMATICAL               <ul style="list-style-type: none"> <li>– MATH-AIDS</li> <li>– MIDILPD</li> <li>– MPSX</li> </ul> </li> <li>• STATISTICAL               <ul style="list-style-type: none"> <li>– DATA PACK, STATPACK, SAS (STATISTICAL ANALYSIS)</li> <li>– APL STATISTICAL LIBRARY</li> <li>– BMD/BMDP BIOMEDICAL PROGRAMS</li> <li>– GPSS-V (SIMULATION)</li> </ul> </li> </ul>

\* AVAILABLE FROM CAMPBELL, CA. DATA CENTER

# COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

## EXHIBIT B CYBERNET NETWORK PROFILE

### APPLICATION AREA/PRODUCT NAME

- OPERATING ENVIRONMENT
  - CDC CYBER 170 AND 200/NOS, SCOPE
- PROGRAMMING LANGUAGES SUPPORTED
  - ALGOL, APL, BASIC, COBOL, COMPASS, FORTRAN, SIMULA, SIMSCRIPT
- DATA BASES AVAILABLE SOFTWARE
  - BASIS - SKILTEC
  - IPF - SYSTEM 2000
  - IS/ATHENA - TOTAL
  - LEXITEC - TOTAL/ATHENA
- DATA BASES AVAILABLE
  - CEDA - TECHNOTEC
  - EBIS
- MANAGEMENT SCIENCES
  - APEX III - PPS IV
  - DCO/TRANPLAN - PROPLAN
  - EZPERT - PROSE
  - GPSS V - SIMSCRIPT 11.5
  - IMSL - SIR
  - NETFLOW II - SPSITEC
  - PDS/MaGen - SPSS
- FINANCIAL APPLICATIONS
  - ASCENT SYSTEM - SIBYL/RUNNER
  - IFPS
- CIVIL ENGINEERING
  - BARS - SPAM
  - CELS - SPSTRESS
  - DESCUS - STRU-PAK
  - FAAST - SURNAL
  - GTICES/STRU DL - SYSTEMS PROFESSIONAL
  - POSTEN
- ELECTRONICS
  - ACSL - MICROLIB
  - ARRAYGEN - PREDICTOR
  - CC-TEGAS3 - RESULTS
  - CDC-SPICE2 - RFOPT
  - CSSL - SYSCAP II
- ENERGY CONSERVATION
  - BLAST - FCHART
  - CALERDA - RSVP
  - ECUBE - SOLCOST
  - EP - TRNSYS
- GRAPHICS
  - DISSPLA - SACM
  - PERSPECTIVE - SURFACE-MAP
  - PLOT PAC - TIGS
  - PLOT-10 - UNIPLOT
- MACHINERY
  - CADENSE - SDRG/SUPERTAB
  - MITAS II - SINDA-9
  - SDRG/IMP - THERMAL
  - SDRG/MDL - TRASYS
  - SDRG/SUPERB

### APPLICATION AREA/PRODUCT NAME

- NUCLEAR FUEL MANAGEMENT
  - ARMP - LEAHS
  - CITATION - PDQ7LEAHSV2
- OPTICAL SCIENCES
  - OPTICAL SCIENCE LIBRARY
- PETROLEUM AND MINING
  - GOLOG, GRAPH, - SSTRAN, MTRAN, HCOMP,
  - MULTI-LITH - TRANSFLOW, TLIO, TCON
  - MINEVAL, MSCDES - STAMOR
  - SSI/100
- PIPING ANALYSIS
  - AAA-T - NUPIPE
  - ADLPIPE - PIPERUP, PRTHRUST
  - CAPIM - PIPESD
  - DIS - PIPELIN II
  - EZFLEX - WAVENET
  - HANGIT
- POWER SYSTEMS OPERATIONS AND DESIGN
  - COMMIT - PROCOS II
  - HEAT RATE CURVE - SYNFE
  - MEVAL - SYNTHA II
- POWER SYSTEMS PLANNING
  - EMTRAN - SSR
  - POWER FLOW - STABILITY
  - SCAN
- RADIATION SHIELDING AND CRITICALITY
  - AMPX - KENO-IV
  - ANISN - MORSE-CG
  - DOT 3.5 - SPAN-4
  - DOT 4
- REACTOR OPERATIONS SUPPORT
  - NIPS - PREM
- REACTOR SAFETY ANALYSIS
  - COBRA IV - HYDROMIX
  - CONTEMP-LT - PISCES
  - DYNODE-2 - RELAP4/REPIPE
  - FLUSH - WREM
  - GALE
- STRUCTURAL ANALYSIS
  - ADINA - MARC-CDC
  - ANSYS - SACS
  - ARGUS - SAMBAS
  - CDC/NASTRAN - STARDYNE
  - EAC/EASE2 - UNISTRUC
- TELECOMMUNICATIONS
  - CDCSAVE - NPJA
  - CNET - PWAC
  - COMNET - TELTAPS

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

Ticketron 2000 leases for \$35,000 a year. Approximately 18 systems have been installed, including Pennsylvania State University, the Los Angeles Forum, the Meadowlands Sports Complex in New Jersey, and the Los Angeles Dodgers.

- A Ticketron system is being installed for the Shubert organization in New York to process ticket reservations for Shubert Broadway productions. This system will permit credit card phone purchases of tickets via a toll-free 800 number.
- Ticketron also has a separate Automated Wagering Division.
- ACTION Data Services based in St. Louis, provides on-line processing and accounting services to the consumer finance industry.
- Brokerage Transaction Services provides data services to brokerage and specialist firms from a data center in New York. Services provided include applications to support stock transactions (front office) and accounting (back office) areas. The accounting software for back office operations is also sold for in-house use.
- EFT Data Services, based in Cleveland, provides payment authorization services to commercial banks which in turn market the service to retail merchants. Point-of-sale authorization/verification services are provided for credit cards and checks.
- Station Business Systems (SBS) provides program scheduling and accounting systems to broadcasting companies. Located in Greenwich, CT, SBS sells a standalone system based on Datapoint hardware for radio and television stations and offers a similar system for cable television companies using Texas Instrument hardware.
- Electronic Trading Services, based in Jersey City, provides a processing service that allows brokers and dealers to electronically buy and sell stocks.
- Banking Data Services, located in Los Angeles, provides a comprehensive on-line service to commercial banks in the areas of demand deposit, loan and savings accounting, and general ledger.
- TECHNOTE is a computer based technology exchange service which brings together those who need technology with those who have technology. The TECHNOTE data base is available through CYBERNET.
- CYBERSEARCH is a computerized recruiting and staffing service that matches professional employees to the needs of employers. CYBERSEARCH is available on CYBERNET.

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

**INDUSTRY MARKETS** The Data Services Company derives revenue from every industry sector. Primary industries served are banking and financial, manufacturing, utilities, government and petroleum.

### COMPUTER HARDWARE AND SOFTWARE

- North American data center locations for CYBERNET services are in Minneapolis, Rockville, Houston, Sunnyvale and Toronto, Canada. International centers are in London, Paris, Brussels, Stockholm, Frankfurt, Melbourne, Johannesburg, Tel Aviv, Mexico City, Rijisijk (Holland), and Rio de Janeiro. A Tokoyo data center will be opened in mid-1980. Mainframes used in the centers are primarily CYBER 170s with NOS and SCOPE operating systems.
- The SBC remote computing service center in Cleveland uses IBM 370/158 and 303X equipment with the CALL 370 and CALL PLUS operating system. CALL 370 uses a custom operating system and CALL PLUS uses MVS. The Campbell (CA) data center uses an IBM 370/158 and CDC Omega 480s. The SBC batch data centers use IBM 360/370 equipment.

COMPANY

CDC / RCS

FY

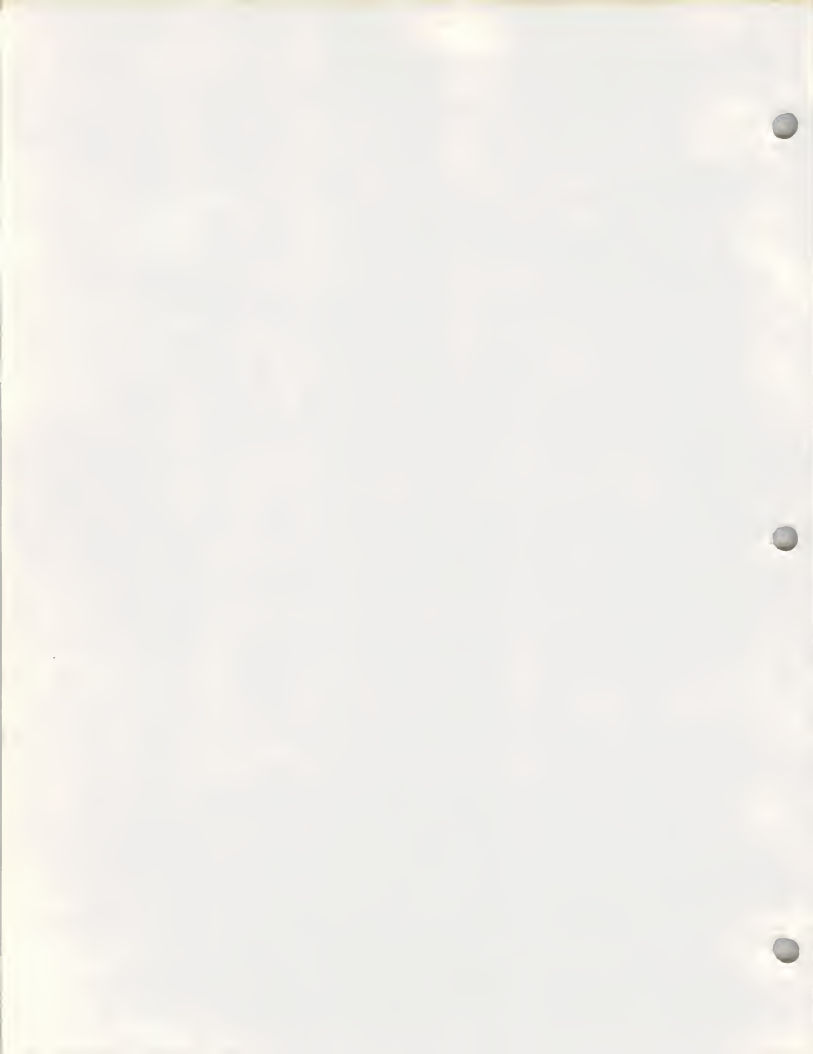
12/31

Cybernet.

FISCAL YEAR	ANNUAL REVENUE (\$millions)	ANNUAL GROWTH RATE (%)	COMMENTS
1971	_____	_____	SBC PLUS CYBERNET
1972	_____	_____	
1973	_____	_____	
1974	_____	_____	
1975	90	20	
1976	108	24	
1977	134		
1978	165	22 % 23 %	Previous years Average 1977-1978
1979 1980 1981 1982 1983	<div>22 %</div> <div>18 %</div>		Max Rate Projected Min Rate Projected
	Max Revenue \$200	Min Revenue \$195	Avg. Revenue \$198
	246	230	238
	300	270	285
	366	320	342
	446	380	413



COMPANY	TOTAL REVENUES - FISCAL YEAR END				ACQUISITION INFORMATION			
	1978	1977	1976	1975	ACQUIRED Company	Place	Date	Rev.
CDC Tot. Data Sec 12/31		300.00 1,512.88	247.4 1,358.26	221.2 1,246.37	Computers Assoc. Inc ? Amer Health Grp ↳ Worms sits on Board	Sudco Az NYC	4/28/78 ? 8/77 B AHG.	cons to mining ? keep ind
GE 12/31			120.00	100.00				
Inquiries 12/31		75.6	59.3	39.4	Direct Dial Data Sys. - acctg sys acq from Graphound See other sheet for continuation of acquisitions			



COMPANY	1974	1973	1972	1971	ACQUIRED Company	Place	Date	Rev.
Steel Corp	143.50	108.50	40.50	19.60	See other page for continued acquisitions			
Steel DS	17.30	12.20	10.10	6.70	Statistics Port Mgt Steel Data Services Transcon/ Transportation Mgt DCS Corp Boca Rn Chicago-based Co. Pyramid Indus DCS Bureau of CA Alpha Omega Corp Health Control Corp	Philadel Salt Lake City NYC Chicago LA Long Beach Oakland Dallas	1969 1969 1971 1973 1971 1972 1974 1974 1974 1978	DP 2.80 on-line GB motor carrier ins real estate payroll country-wide mg automated ledger slve to 1200 acc retailers health.
CDC TOTAL CDC-DS	1,101.14 157.2	948.2 143.6			See other sheet for acquisitions			
UCC w/ly	72.51 88.81	76.04 79.83	73.21 74.91	70.74 74.01				
Informatics	33.1	27.7	28.1	18.4	Mgt Hongois Data Sys Programming Method NERGY - EQUIP MATICS System Three Cota Tech. Co. Info Sys. Co. MARK IV Syst Co. Western Systems Co. tried to acq. Autocomp SDA Corp D	Dallas NY DC Delaware	1977 1975 1974 1974	sft. the bus cptr. 1.0M <del>72</del> 12/72



Comments from Ben Kilgore  
per MPPB 10/3

James J. Bowe  
VP Corp Relations

from 10/3

#### COMPANY HIGHLIGHT

CONTROL DATA CORPORATION  
8100 34th Avenue South  
Minneapolis, MN 55420  
(612) 853-8100

William C. Norris, Chairman and  
Chief Executive Officer  
Public corporation, NYSE  
Total employees: 41,000+  
Total revenues, fiscal year end  
12/31/76: \$2,009 million\*  
Computer Business Revenues: \$1.358  
million

data soc 12/76 = 247.4m  
data soc 12/77 = 300.3m

#### THE COMPANY

- Total company revenues grew from \$1.929 million in 1975 to \$2,009 million in 1976, a growth of 4%. The aggregate computer business grew 9% while financial services revenues declined 3.6% during the 1975/1976 timeframe.
- Total corporate net earnings grew 28.9% between 1975 and 1976, from \$37.7 million to \$48.6 million. Commercial Credit's earnings in 1976 were \$36 million. The computer business, which had a steeper earnings growth rate (35.4%) from a smaller base, rose from \$9.3 million to \$12.5 million between 1975 and 1976.
- Earnings per share, including extraordinary items, were \$2.80 with 16.7 million shares outstanding.

#### KEY PRODUCTS AND SERVICES

- The company is divided into three operating entities: computer operations, financial services, and education.
  - The computer operations group, headed by Robert M. Price encompasses computer systems, services, and peripherals.
  - The financial services group, headed by Paul G. Miller, encompasses the business of Commercial Credit Company.
  - The newly formed education company, headed by John W. Lacey, includes schools, learning centers and computer-aided education
- The education group offers:
  - \* Includes Commercial Credit

August 1977

COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- Fourteen Control Data Institute schools.
- Thirty learning centers in major U.S. cities equipped with PLATO, a computer-based instructional system.
- Computer systems, software, and terminals to implement computer-aided education. ~~The group could generate \$35 million revenues in services and \$20 million revenues in hardware in FY-1977.~~ *See 2076 from 1975.*
- CDC's computer services revenues, derived from the computer group, were \$500 million in 1976. This business is segmented into professional, engineering, data, and dedicated industry services.  
*Not CDR & Co.*
- Professional services, with more than 2,000 employees, accounted for approximately \$45 million in 1976. Sources include programming, design, and consulting work in areas such as structural and nuclear engineering.
- Engineering services, with more than 6,000 employees, generated \$175 million in 1976 from providing worldwide computer maintenance for products of both CDC and other manufacturers, accounted for \$250 million revenues in 1976. ~~Management expects a 20% growth in 1977.~~ *244*
- Data services encompasses the computer services offered on CDC's Cybernet network as well as the applications offered on Service Bureau Company's CALL/370 network. These services have been integrated into a single network encompassing 180 local markets and using 21 large mainframe computers located in five major computer centers in the U.S. Other service centers are located in Canada, Australia, Mexico, Israel, Brasil South Africa, and six European countries.
- Dedicated industry services offered include:
  - ARBITRON, an audience rating service which grew 23% in 1976
  - TICKETRON, a ticketing and wagering service which grew 30%.
  - BTSI, which provides services to the brokerage community.
  - ACTION, which provides data services oriented to financial companies.
  - TELEMONEY, a electronic funds transfer service for the banking community.
  - FOCUS and SRI, which are oriented to credit unions and medical information services, respectively.
- New products recently announced in the computer services area are:

August 1977

## COMPANY HIGHLIGHT/CONTROL DATA CORPORATION

- UNISTRUC, a service integrating structural analysis techniques and computer graphics. Management expects this service to improve user productivity by as much as 75%.
- CDC's CALL/370 interactive-service introduced new manufacturing applications in the materials requirement and planning area as well as a new credit application to help bank loan officers evaluate a company's ability to repay a loan.
- CDC management is strongly committed to the computer services market. Its recent organizational restructuring will help the company to improve the focus of its resources and accomplish its growth and profit objectives.

APPLICATIONS CDC's major applications are general business and scientific and engineering. It also provides services for specialty and utility application.

### INDUSTRY MARKETS

*Financing, process manufacturing (petroleum)*  
Education and federal, state, and local government are CDC's major industry sectors although it derives revenues from most industries except transportation.

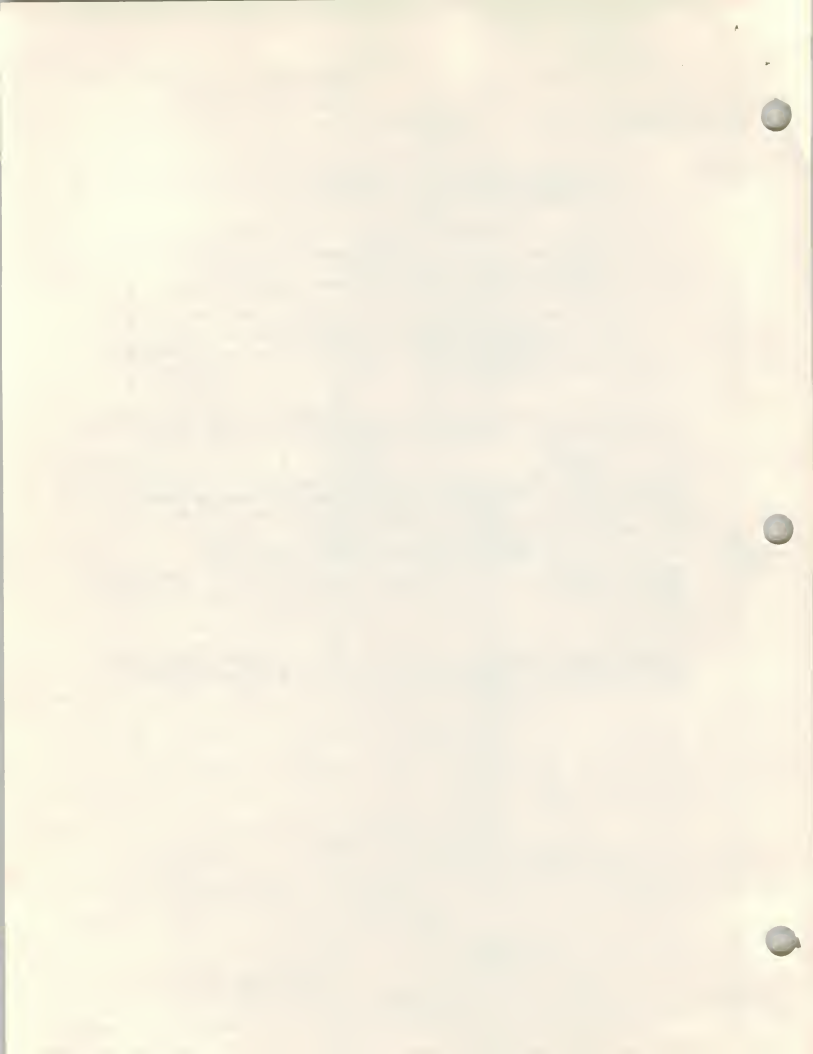
### GEOGRAPHIC MARKETS

*Engineering, manufacture 70-80% are*  
CDC offers services throughout the U.S. and in Canada, Australia, Mexico, Israel, South America, South Africa, Western Europe, and Japan.

### COMPUTER HARDWARE AND SOFTWARE

CDC's 21 large mainframes include Cyber 170s, Cyber 76s, and various IBM mainframes as well as a variety of other computers and peripheral equipment.

August 1977



1) Index return on equity?

per MPB 10/3

2) on CDC Hilite

Ben Kilgore

on education company

\$35M

\$20M

} take it out

it is wrong!!!

20% growth in engineering services? wrong  
Delete

total services up 20% over a year ago  
not data services.

Under industry markets.

drop word "education" - misleading  
sounds like 70% bus. have there.

areas they do lots of work

- financial
- engineering (structures)
- petroleum.



## CONTROL DATA CORPORATION

### INTRODUCTION

- This company analysis focuses on the Systems Data Services and Marketing (SDSM) organization in CDC, which is the group responsible for providing computer services to users.
- Within SDSM the concentration is on the largest organizations providing computer services, such as Cybernet and SBC. Other computer services such as ARBITRON, Ticketron, Syntonic Technology, and Brokerage Transactions Services Inc. are also analyzed to a lesser extent because of their smaller size. Other CDC groups are discussed to set the framework for computer services.
- Although the present organization is shown as accurately as possible, the analysis focuses on the functional businesses of the divisions, their services and their strategies, rather than on the detailed organization structure itself.
- Detailed financial data are INPUT'S estimates. An "E" attached to a figure also denotes an INPUT estimate.

## DETAILED COMPANY PROFILE

CONTROL DATA CORPORATION  
8100 34th Avenue South  
Minneapolis, Minnesota 55420  
(612) 853-8100

Chairman and President,  
William C. Norris  
Computer services employees:  
12,000 (E)  
Public corporation, widely  
held

1975 Revenues (Fiscal Year Ending December 31, 1975)	
Computer Business	1,246,369
Commercial Credit	675,068
TOTAL	1,921,437

---

### COMPANY HISTORY AND BACKGROUND:

- Control Data Corporation was organized by William C. Norris in 1957 when the company was incorporated in Minnesota. (Currently the company is registered in Delaware.)
- CDC established its reputation with its scientific computers starting with the 1604 and continuing with the 3000 Series, the 6000 Series, the Cyber Series, and the Star 100.
- In the 1960s the company diversified into other businesses such as insurance, commercial credit, computer services, and peripherals.
- In 1977 CDC will celebrate its 20th anniversary. By that time its services businesses will be the largest segment of the total company's business.
- CDC's business may be segmented into three parts.
  - Systems: The largest portion of the systems business is made up of the scientific mainframe manufacturing group. CDC is still the leading manufacturer of large computer systems optimized to solve scientific and engineering problems. Other products are aerospace instruments and controls.
  - Services: Services, the largest and fastest growing segment includes data services, maintenance, consulting and education. It accounted for \$445 million in revenues in 1975. Data services includes Cybernet, the delivery vehicle for a vast array of evolving and changing business services, and SBC, which was acquired from IBM in 1973 and has the highest profitability in the group.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Peripherals: The CDC peripherals group is supplemented by a series of manufacturing and marketing joint ventures in which CDC is either an equal or a majority partner with companies such as NCR, Honeywell, and ICL.

CDC has evolved a business strategy to utilize common R&D and manufacturing facilities in order to obtain favorable economies of scale. This strategy has been implemented by developing products which, with some modifications, can be sold to:

- a captive market through Computer Peripherals Inc. or Magnetic Peripherals Inc. buying for its own needs,
- The OEM market through the OEM sales force,
- the "plug compatible" end user market sold through the end user sales force.

This strategy has been successful and has enabled CDC to become a dominant force in the independent peripheral market.

- CDC has been called "the super computer" company, "the total service" company, and "the financial services" company. CDC's uneven record of earnings shown in Exhibit I and its changing image has confused the financial analysts to whom unpredictability is a sin worse than stagnation. Bill Norris, the brilliant and controversial architect of this company, has produced a unique company - a company with a wide array of business interests.

### HISTORY OF COMPUTER SERVICES:

- CDC's computer services have always relied on the largest and most advanced mainframes available from the manufacturing operation. Starting in 1961 with CDC 1604s, the network evolved to the CDC 3600s in 1964, which were augmented by the 6000 series in 1967 and, in turn, are gradually being replaced by the Cyber series.
- In 1976 the Star 100, CDC's largest and newest array processor, was introduced into the system. In 1977 the Cyber 170 Series will be incorporated.
- In 1967 CDC also acquired CEIR, a computer services firm using IBM batch processing and GE timesharing equipment. The work performed on these mainframes was subsequently moved to CDC equipment.

## EXHIBIT I

## CDC'S FINANCIAL HISTORY

FINANCIAL PICTURE

## Revenues (In Thousands)

	1970	1971	1972	1973	1974	1975	1976 (E)
Computer Business	\$551,523	\$585,961	\$683,796	\$948,191	\$1,101,142	\$1,246,369	\$1,350,000
Finance Business	394,057	344,310	343,044	398,638	478,767	457,659	510,000
Insurance Business	121,241	130,237	149,357	164,744	191,518	217,409	250,000
TOTAL	1,066,821	1,060,508	1,176,197	1,511,573	1,771,427	1,921,437	2,110,000

## Earnings (Loss) Before Income Taxes

	1970	1971	1972	1973	1974	1975	1976 (E)
Computer Business	\$(72,002)	\$(33,610)	\$9,991	\$32,727	\$(66,819)	\$31,556	12,500
Finance Business	53,634	79,935	78,950	63,494	53,701	71,285	38,000
Insurance Business	14,887	17,612	21,868	14,963	7,708	(20,943)	36,700
TOTAL	(3,481)	63,937	110,809	111,184	(5,410)	81,898	87,200

(E) - INPUT ESTIMATE

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- At the same time CDC started developing computer education, professional services, and maintenance services through internal growth and through acquisition of companies such as:
  - Howard Research
  - Comma
  - Syntonic Technology
- Mr. Norris started emphasizing the "total service" or "multi-service" concept in the fall of 1971, and it was introduced to the field in early 1972. In 1973 IBM gave up SBC to CDC in exchange for the settlement of a law suit and the destruction of the index of documents used in the suit.
- The recent activity, culmination<sup>AG</sup> in the appointment of Mr. Henry J. "Hank" White to head up the data services group, has focused on integrating more closely the various data services, especially Cybernet and SBC.
- CDC has a strong and diversified base of computer services business. In INPUT'S opinion, the recent organization changes have considerably strengthened CDC's ability to expand from this base.
- The announced involvement of Commercial Credit in the sales and distribution of computer services, including computer based education to small and medium-sized businesses, is particularly important in this context.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

### SUMMARY AND CONCLUSIONS

- The most profitable segments of the CDC business in 1975 was the Commercial Credit Group which earned \$28.4 million, more than twice the dollars earned by the computer business. The computer business reversed its loss of over \$35 million in 1974 and earned \$13.0 million in 1975 for a total profit of \$41.5 million. Continuing investments in data services and peripherals as well as losses in insurance operations have kept CDC 1975 earnings below industry standards.
- CDC has invested heavily in research and development. Between 1973 and 1975 the company spent over \$200 million in R&D with 1974 the peak year when CDC spent \$63 million. The 1975 after tax profit in the computer business was only \$9.1 million.
- In its public pronouncements Control Data Corporation indicates a change in its focus from computer equipment to computer services. This is a somewhat misleading statement, since most of the research and development dollars go to equipment research whose underlying technology CDC considers essential in the efficient delivery of its data services.
- The joint R&D venture between CDC and NCR, at the Advanced Systems Laboratory, is tapering off. Its purpose was to design a new common mainframe slated to be the base of an integrated compatible product line.
  - Both companies envision a common set of CPUs which would evolve into systems which will be programmed, manufactured, and marketed independently.
  - Initially CDC was to market the high end of the line and NCR, the low end. The specifics, however, were only agreed upon in vague terms. Where one product would begin and the other end was never clearly stated. CDC's average system rents for \$40K per month and is primarily sold to scientific users, while NCR's systems rent for less than \$10K per month and are marketed to business users. It is hoped this will keep the two companies from direct confrontation.
  - CDC expects to gradually incorporate the CDC-NCR commonly-developed technologies into its new products over the next five years. Although the original goal of a compatible product line may never be fully realized, it is likely that in the distributed architecture environment of the future, common functional processors will appear in the systems built by both companies.

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- The largest mainframe in CDC's arsenal is the Star 100, a very large string array processor which has been sold to NASA and has also been connected into the Cybernet Network.
- CDC generates one third of its computer business overseas.
- In addition to selling mainframes and peripherals in the international market, CDC also provides a variety of computer related services to companies abroad. The overseas business exposes the company to foreign exchange fluctuations which may impact the 1976 earnings.
- CDC has overseas as well as domestic joint ventures. The overseas ventures are with both foreign companies and foreign governments. The following is a list of CDC's joint ventures other than its mainframe development effort with NCR.

NAME OF COMPANY	PARTNERS	COUNTRY	MAJOR PRODUCT OR SERVICE
Magnetic Peripherals, Inc.	CDC Honeywell	U.S.	Rotating Memories
Computer Peripherals, Inc.	CDC, NCR, ILC	U.K. U.S.	Punch card equipment printers, mass storage devices, magnetic tape drives, tape cassette drives, flopp disk drives
Elbit	CDC 55%	Israel	Minicomputers, peripherals
Micro-Bit	CDC, ILC, Nixdorf, Plessey	U.K Germany	Semiconductor manufacturing
Control Dataset	CDC, ILC	U.K.	Manufacture disks, magnetic tapes
Data SRL	CDC, Romania	Romania	Peripheral equipment, manufacturing

- In addition CDC has been doing research for several years under a \$25 million grant from the Canadian government.
- Also, a \$15 million contract was received from Iran in 1975 to develop educational facilities and equipment.

- Joint ventures are a double edged sword and the multiple ventures in which CDC is involved are basically with competitors. Therefore the inherent dangers are obvious. As long as the original partners who signed the agreement are present, the venture may continue to run smoothly; when the original people are replaced, problems are likely to arise.

GROWTH AND SEGMENTATION OF COMPUTER SERVICES:

- CDC has placed major emphasis on its computer services business during the last five years (see Exhibit II). The growth in dollars is shown in Exhibit III. Maintenance services provided to CDC's own systems customers ("captive" revenues), are included in the computer services revenues.
- The most rapid growth year was 1973 when CDC acquired, for \$32 million, businesses generating over \$90 million in revenues. The Service Bureau Company, with revenues of \$63 million in 1973 and after tax profits of \$1.5 million, was acquired then as part of the IBM settlement package. Discounting acquisitions, CDC's computer services are growing at 20% per year.
- As shown in Exhibit IV, Data Services is the largest contributor to CDC's computer services revenues.
- Batch Services is still the largest revenue generator within Data Services as shown in Exhibit V.
- An integrated operating system merging SCOPE and KRONOS into a single user oriented multi-mode system is being developed gradually. The date for integration is probably 24 to 36 months in the future.
- As shown in Exhibit VI, Structural Engineering accounts for over half of all application products, which in turn account for 50% of Cybernet U.S. revenues. The remainder is dependent on custom software developed for the user by CDC and on "raw" power provided to users for processing their own applications.
- The current marketing strategy is based on "vocalization," or industry orientation. The CDC services marketing effort is being organized along industry lines.

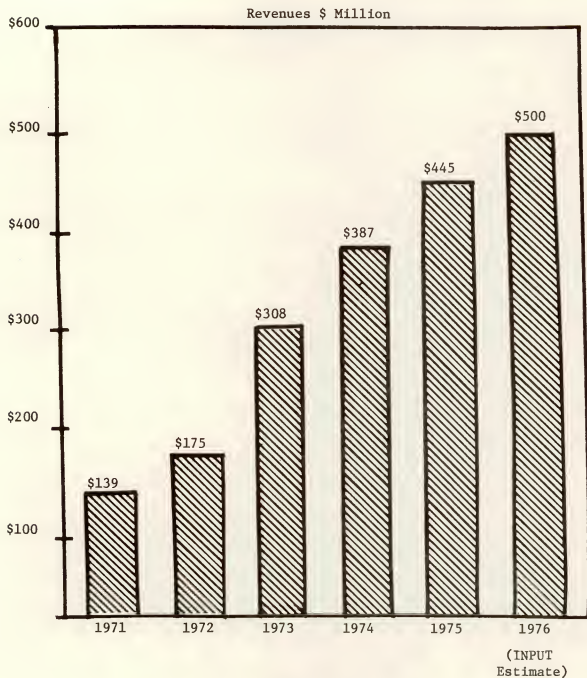
## EXHIBIT II

Percentage of Total Computer Business Revenues by Sales, Services and Rentals

	1970	1971	1972	1973	1974	1975	1976(E)
Equipment Sales	65%	61%	58%	53%	50%	48%	48%
Equipment Rentals	14%	15%	16%	14%	14%	15%	14%
Computer Services	21%	24%	26%	33%	36%	37%	38%

EXHIBIT III

COMPUTER SERVICES REVENUE GROWTH



February/1977  
P-6.10

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT IV

CDC COMPUTER SERVICES REVENUE DISTRIBUTION 1975 AND 1976

	1975 E	1976 E
<u>DATA SERVICES</u>		
Established Services:		
Service Bureau Company	\$ 98	\$106
CYBERNET Services (worldwide)	76	83
Sub-Total	\$174	\$189
Application Services:		
ARBITRON	\$ 20	\$ 22
Action Data Services	12	10
Brokerage Transaction Services	4	4.5
Sub-Total	\$ 36	\$ 36.5
Developing Services:		
Automatic Wagering	\$ 1	\$ 1
Compu/Net	1	1
Reservation Services	2	2
System Resource Inc.	< 1	1
Ticketron	7	8
Other	< 2	12
Sub-Total	\$ 13	\$ 25
Sub-Total	\$223	\$250.5
<u>ENGINEERING SERVICES</u>		
MAINTENANCE Sub-Total	\$159	\$178
<u>PROFESSIONAL SERVICES</u>		
Sub-Total	\$ 38	\$ 42
<u>EDUCATION SERVICES</u>		
Sub-Total	\$ 25	\$ 30
<u>TOTAL</u>	\$445	\$500

(\$ Million)

February/1977

P-6.11

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT V

CDC DATA SERVICES REVENUE DISTRIBUTION 1976 (E)

SERVICE	PROCESSING MODE				
	INTERACTIVE	REMOTE BATCH	BATCH	FM*	TOTAL
Service Bureau Co.	\$53	\$ 8	\$ 45	--	\$106
CYBERNET Services:					
U.S.	15	17	13	--	45
Europe	5	8	15	--	28
Other	--	2	8	--	<u>10</u>
					83
ARBITRON	1	--	21	--	22
Action Data Services	10	--	--	--	10
Brokerage Transaction	--	--	< 5	< 1	4.5
Automated Wagering	--	--	--	1	1
Compu/Net	1	--	--	--	1
Reservations Services	2	--	--	--	2
Systems Resources, Inc.	--	--	< 1	< 1	< 1
Ticketron	--	8	--	--	8
Other	--	10	2	--	12
TOTALS	\$87	\$53	\$110	\$2	\$ 250.5

\* FM= Facilities Management

(\$ Million)

February/1977

P-6.12

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VI

SEGMENTATION OF REVENUES BY APPLICATIONS  
WITHIN CYBERNET (WORLDWIDE) 1976 (E)

TYPE OF APPLICATION	SHARE OF APPLICATION- DEPENDENT REVENUES
Structural Engineering	55%
Data Base Applications	21%
Management Sciences	14%
Electrical Engineering	3%
Financial Programs	2%
Graphics	5%
TOTAL	100%

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

ORGANIZATION FOR COMPUTERS AND SERVICES: The president of Systems Data Services Marketing organization (SDSM) is Robert M. Price. SDSM has four line operating groups; Systems, Marketing, Data Services, and Education Systems and Services, all reporting to Robert Price. The organization is shown in Exhibit V.

- Systems, reporting to J.V. Titsworth, includes the Aerospace operations as well as the Systems operation, Research and Development, and CDC Canada Ltd. Its principal mission is to manufacture mainframes.
- Marketing, reporting to Vern Sieling, is responsible for sales and support and for providing professional and engineering services. It includes groups such as Syntonic Technology and Comma which have now been fully integrated into the CDC organization.
- Data Services, the largest group which generates over 50% of revenues, reports to Henry J. White, formerly of IBM and SBC. This group encompasses all the network services: SBC, Action Data Services, ARBITRON, Ticketron, and S.R.I.
- Education Systems and Services, reporting to J.R. Morris, includes the computer based education group, education market development, and education program support.
- INPUT considers that the organizational structure of the Systems Data Services Organization (Exhibit VII) complicates decision making and assignment of responsibility.
  - Because of the involvement of separate organizations, requirements for decisions flow upwards through a series of management levels to a level higher than should be necessary. For example, decisions on a Cybernet service may involve, in addition to the Cybernet organization itself, Comsource (responsible for computer operations), SBC (responsible for the network), Marketing (a separate organization in SDSM), and perhaps others.
- INPUT considers there is a need to more clearly define responsibilities and to push decision making closer to "where the action is".
- Recently Mr. Henry J. White has been assigned responsibility for Data Services, including Cybernet, SBC, and the developing services. This change in management will help to focus resources, integrate the groups wherever that is practical, and eliminate duplication; however, Computer Services Marketing and support is still not under this central control.

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

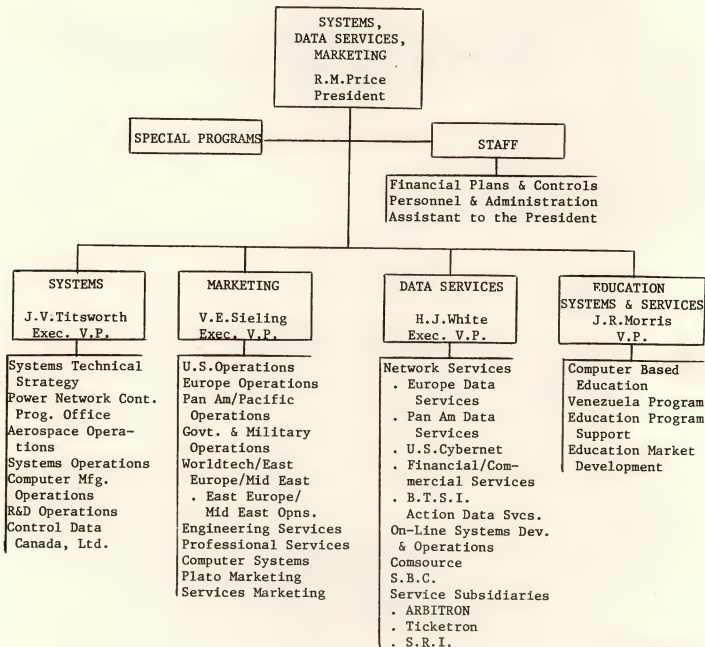
PRODUCTS AND SERVICES:

- The remainder of this report concentrates on Data Services. Network Services, the largest segment of the Data Services organization, consists of four major groups. INPUT estimates that the combined sales of the four groups will grow from \$114 to \$125 million between 1975 and 1976.

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VII

SYSTEMS, DATA SERVICES, MARKETING ORGANIZATION



## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

U.S. CYBERNET, is the largest and fastest growing part of Network services as shown in Exhibit VIII.

- Cybernet offers two main processing services through its network of 20+ "supercomputers."
  - SCOPE services provide remote batch and local batch processing and are offered at all CDC centers. Each center has a library of scope batch applications programs.
  - KRONOS services provide four processing modes: interactive, remote batch, deferred batch, and CDC CYBERLINK Communications Interchange. KRONOS is supported in the U.S., Canada, and Brazil by the Rockville, Maryland, center. The Brazilian operation has a local KRONOS center as well. The service is also offered in Australia and Europe. KRONOS includes a library of more than 100 programs for solving problems in mathematics, statistics, finance and engineering.
- Two other processing services have been introduced:
  - The CYBER 76 Service is based on a CYBER 76 in Minneapolis and is a remote batch service offered only in the U.S.
  - CDC introduced its STAR 100 Service from its Arden Hills facility in Minneapolis on September 14, 1976.

### CYBERNET Services

- All the major mainframes in the Cybernet network are CDC Cyber 70, 170 or 6000 series computers, operating either under the SCOPE or KRONOS operating systems.
- System 2000 data management software, STRUPAK programs to solve structural engineering problems, IFMS financial planning system, APEX III linear programming package and many other packages are offered on the system.
- The user has the option to submit a job to the batch queue of the timesharing system. This capability allows the user to program in several other languages, including COBOL and SIMSCRIPT. Jobs executed in batch mode on this system are normally limited to 52,000 words of CPU memory, but have access to timesharing mode files.

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Cyberlink Interchange allows a user to process batch jobs requiring more than 52,000 words of CPU memory. The Cyberlink Interchange consists of high-speed telecommunications lines (7,200 to 40,800 baud) that link the Cybernet timesharing batch processing systems and the software that enables data transfer. It is available to any Cybernet timesharing user in North America, Europe, and Australia. Alternately, the user can process batch applications programs under SCOPE. Some of the SCOPE programs have been modified to make them easily accessible to the timesharing user via Cyberlink; others may require a knowledge of special file-handling procedures.

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VIII

Network Service Revenues Distribution

1975 and 1976

NETWORK SERVICES	1975 Rev(E)	1976 Rev(E)
U.S. Cybernet	\$40	\$45
Europe Data Services	27	28
Pan Am Data Services	9	10
Financial/Commercial Services	38	42
TOTAL	\$114	\$125

(\$ Million)

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Under Cyberlink, a job stream submitted to one computer is transmitted to another computer where it is defined as a local job stream with a remote origin. This multi-system based, core-to-core linkage, has the following advantage:
  - Resources of one operating system are available to users to another operating system for both normal and overflow processing.
  - Computer network applications are available to submit, compile, and execute a job at different locations without switching the data paths.
  - Extremely fast data transfers can be made from one computer to another.
  - There is no need to transport or separately transmit intermediate storage media.
- Cyberlink provides two major advantages to the traditional SCOPE batch user:
  - The user can edit his input and initiate a batch program from an interactive terminal.
  - Output can be sampled and verified before being transmitted in full.
- Job turnaround can thus be significantly shortened by establishing the validity of the output before transmission. After verification the finished output can be routed to any batch terminal on the network - be it a user's office, or the line printer at a central site.
- Cyberlink provides a variety of options for data storage input and output. Files can be stored on either the SCOPE or KRONOS system. A job for batch execution can be composed of files from both systems. Files that are frequently modified can be stored on the timesharing system, updated during interactive processing, and then transferred to the batch processing system to be used as needed. Modifications to SCOPE files can be received at the user's interactive terminal and redirected to any terminal in the Cybernet Network or to any central site.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Cybernet services depend heavily on a relatively few (10-15) large customers for up to 50% of its U.S. revenues. Included in this group are Bechtel, Hughes Aircraft, NASA-AMES, NCR, and TVA. Cybernet also serves a large number of engineering and architectural firms where the revenue stream is irregular.
- There are, at present, over 1100 FOB (access points) in the CALL/KRONOS network. CDC/SBC is in the process of installing dynamic routing so that KRONOS, CALL/370 and CALL/PLUS will share a common telephone number at each FOB point. Users designate the service, and the network processor routes traffic accordingly.
- Projected growth of Cybernet services is:
  - Remote Batch 10%
  - Timesharing 30%
- T/S services are being promoted in the business area with increasing success.
- A major problem with Cybernet services was a cumbersome and inefficient organization with layer upon layer of "coordinators" being added. The number of people in Cybernet was reduced by one-third, eliminating some of the middle management functions and simplifying reporting lines. This has made the organization more efficient.
- Cybernet has a unique powerful computing service with a strong back-up staff in the engineering disciplines.

### CYBER 76 Service

- Introduced in late 1974, CYBER 76 service is continuing to build revenues. Typical applications are those requiring large number crunching capabilities, including reservoir simulation, structural analysis, linear programming, and nuclear reactor analysis.
- CDC Cyberlink Communications Interchange between Cyber 76 and KRONOS is available. Cyber 76 can also be accessed through IBM HASP multileaving protocol.
- Cyber 76 Service offers very large computing capacity and rapid turnaround. The service will be expanded to meet market demands.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- The two main operating systems offered on the CDC Cyber series are NOS, evolved from KRONOS, and NOS/BE, evolved from SCOPE 3.4; in addition SCOPE 2.1 is used on the 76 Service. CDC has been working for the past three years trying to integrate the two systems. Final integration is still about two years away according to CDC management.

### STAR-100 Service

- CDC introduced its STAR-100 Service in 1976. Equipped with four million bytes of directly-addressable memory plus a virtual memory capability, the STAR-100 employs stream processing, virtual addressing, hardware macro processing and a large semiconductor memory register file. Processing is normal sequential processing or parallel processing up to 64-bit work vectors.
- Customers can access the service through a front-ended CDC 6400 Computer System. User programs can be written in FORTRAN, and enhanced by vector language extensions.
- A primary advantage of Cybernet's new STAR-100 service is much faster job processing by redesigning old programs to employ vector techniques. For example, STAR processes one program four times faster than a vectorized CDC 7600 does (the CDC 7600 is twice as fast as a regular 7600 which in turn is four to five times as fast as a 6600). The price to use the STAR 100 ranges from \$1500 to \$7500 per hour.
- Organizations with problems in the areas of structural engineering, reservoir engineering, load flow analysis, cable routing/optimization, environmental (weather) analysis, econometrics, structural design of aircraft, earthquake predictions, and energy physics are among the first clients for the STAR-100 series.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

### CYBER Software

- None of its structural engineering packages are "made" by CDC. In fact, most applications products are obtained from third parties. Cybernet stopped applications software developments in the mid-60s because of lack of funds.
- Some examples of applications package sources include:
  - ANSYS - Swanson Analysis System
  - CDC/NASTRAN - developed by CDC under contract to NASA, supported by MacNeal Swendler Corporation (Los Angeles)
  - MRI/STARDYNE - developed by Mechanics Research Inc. (Los Angeles)
  - MARC-CDC - developed by the MARC Analysis Research Corporation (Providence, RI)
  - ADLPIPE - developed by Arthur D. Little, Inc. (Cambridge, MA)
  - MITAS - Martin-Marietta's version of CINDA-3G
  - PICES TM - Physics International Company (San Leandro, CA)
- CDC has, however, developed systems products including:
  - APEX, a mathematical programming system
  - ATHENA, an on-line query language for TOTAL, (the Cincom data base manager).
- IFPS, CYBERNET's entry into the financial planning and management area, was developed by EXECUCOM Systems Corporation (Austin, Texas). Despite its apparent similarity with PROPHIT and other SBC products in BIS-PAC, competition between Cybernet and SBC is not intended.

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

## Sales Offices

- Cybernet services are sold in the U.S. through 47 branch sales offices, 25 district sales offices and 5 regional sales offices. Each region also has a coterminous District and Branch organization. Therefore there are 77 sales outlets for Cybernet listed in Exhibit VI plus 36 sales offices for SBC.
- There are 7 domestic Cybernet centers:

LOCATION	EQUIPMENT
Rockville, MD	2 CDC CYBER 73 2 CDC 6600 (Being replaced by CYBER 175)
New York, NY	1 CDC 6600
Boston, MA	1 CDC 6600
Houston, TX	1 CDC CYBER 74 1 CDC 6600
Minneapolis, MN	1 CDC 6600 1 CDC CYBER 76 1 CDC STAR 100
Los Angeles, CA	1 CDC 6600 2 CDC 6400 (COMPU/NET)
Sunnyvale, CA	2 CDC 6600 CDC CYBER 175

## Equipment Used

- CDC is in the process of replacing its older 6400/6600 computers with CYBER 170s. These will be added to the CYBER 73 and 74 computers now in place.

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- In addition CDC has more than 50 remote batch processing sites including public terminals where customers can take their work for submission to the systems.

EUROPE DATA SERVICES, headed by Vice President D.L. Bickel, had 1975 Computer Services Revenues of \$27 million and is expected to reach \$28 million in 1976.

- Cybernet Service in Europe had been growing at the rate of 40% per year between 1972 and 1975, without any acquisitions since the ITT service business acquisition in 1973. In 1975, unlike the other Cybernet operations, CDC Europe was "on-target" with revenues of \$27 million. Since 1975, however, business has been slipping, partly as a result of economic slowdowns in England and France. D.L. Bickel is the recent appointee responsible for getting business back on track.
- In mid-April 1976, CDC opened its Brussels "cluster" center. The center was planned to house 2 IBM System/370 Model 158s and 2 Cyber 70 Model 73s; however, only the CDC equipment was initially installed.
- The Cyber 70s provide KRONOS Timesharing transferred from The Hague Cybernet center. By the end of 1976 all SCOPE batch processing centers were planned to be connected to the KRONOS service. Local access to KRONOS is available in the following 12 major metropolitan areas and throughout the Netherlands:
  - London and Manchester, England
  - Paris, France
  - Frankfurt, Munich, Stuttgart, Dusseldorf, and Hamburg, Germany
  - Stockholm, Sweden
  - Oslo, Norway
  - Copenhagen, Denmark
  - Zurich, Switzerland
- The majority (90%) of CDC Europe's data services revenues came from batch and remote batch processing through the following centers:

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

LOCATION	EQUIPMENT	COUNTRIES SERVED
London	2 IBM 360 Systems - Model 65 and Model 75	United Kingdom
Paris	1 CDC CYBER 70 Model 74	France
Frankfurt	2 CDC 6600	W. Germany, Austria
Stockholm	1 CDC 6600	Denmark, Norway, Finland, and Sweden
The Hague	1 CDC 6600	Belgium, Netherlands, Sweden United Kingdom (SCOPE)

- Each center has its own network of terminals.
- Most of the revenues obtained are from "utility" sales, primarily in engineering disciplines. The U.K. is heavy in business processing because of the ITT acquisition.
- Cybernet employs about 550 persons in Europe including 80 salespersons and 60 support analysts.

PAN AM DATA SERVICES (PADS), headed by Vice President Peter Van Beek, generated 1975 computer services revenues of \$9 million and will reach \$10 million in 1976.

- Until the establishment of Data Services Far East, PADS was responsible for all Cybernet services outside the U.S. and Europe. Through Data Services Far East, Henry White was given responsibility for Cybernet services in Japan.

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- PADS locations are shown below:

COUNTRY	COMPUTER SYSTEM	EVALUATION
Australia	CDC 6600 in Sydney (SCOPE) CDC CYBER 70 74 in Melbourne (SCOPE) CDC CYBER 70 73 in Melbourne (KRONOS)	Established and Profitable
Canada	CDC CYBER 70 74 in Toronto (SCOPE)	Established and Profitable
Mexico	CDC 3300 in Mexico City	Weak
Brazil	2x IBM SYSTEM/360 Model 50 in Sao Paulo and CDC 6600 in Rio de Janeiro	High Potential
South Africa	CDC SYBER 74 in Pretoria (in joint venture with ISCOR)	Just Evolving

- In Brazil KRONOS services are offered directly and via satellite from Rockville, Maryland.

FINANCIAL/COMMERCIAL SERVICES, headed by Vice President G.J. Hobbs, had 1975 computer services revenues of \$32 million growing to \$42 million in 1976.

- This organization is basically the Industry Management Office which has become a line function. It is composed of miscellaneous industry-specialized services which, for the most part, use CDC computers. These include services in the following industries:
  - Computer Finance - ACTION Data Services (see following description)
  - Brokerage - Brokerage Transaction Services, Inc. which includes Davidsohn Computer Services (see following description)
  - Insurance - In start-up mode at present with a Home Office CYBERDATA insurance system. It has been installed at Hanover Insurance Company of Worcester, Massachusetts, and at Calvert Insurance Company of Baltimore. CYBERDATA is a Property and Casualty Insurance system.

February/1977

P-6.27

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Banking - responsible for producing EFT proposals and also for operation of the former C-E-I-R banking operation in Los Angeles. This operation provides services to 10-12 banks with a total of about 25 branches; it appears to be geographically limited and without significant corporate support.
- Transportation - no known products or revenues with the exception of the Washington Metropolitan Area Transit Authority (METRO) which is primarily an equipment contract.

BROKERAGE TRANSACTION SERVICES, INC. (BTSI): New York, NY, headed by John O. Bryen, President, had 1975 computer services revenues of \$4 million and is expected to generate \$4.5 million in 1976.

- BTSI was formed in 1970 to provide computer services to the brokerage community. Using dual CDC 3300s with CDC 1700 front ends, BTSI provides message switching and order matching services. Approximately 15% of the branch offices of NYSE member firms are served by the order match service.
- The brokerage accounting services of Service Bureau Company were merged into BTSI in 1974. These services are provided to about 25 firms in various U.S. cities using IBM System/360 Model 65 and Model 40 processors.
- Davidsohn Computer Services, Inc., a wholly owned subsidiary of CDC acquired in 1974, was merged into BTSI in 1975. When acquired, it had annual revenues of about \$1 million.
- Total BTSI revenues were \$4 million in 1975, representing about 20% of the market. ADP and Midwest Services control the other 70% of the market.
- BTSI will probably expand into trust departments and other investment areas of banks.

ACTION DATA SERVICES (ADS): St. Louis, MO, headed by General Manager, W.J. Ernst with 1975 annual revenues of \$12 million, is expected to generate \$10 million in 1976.

- Action Data Services, acquired from ITT in 1973, provides consumer finance services to over 40 customers in 46 U.S. and Canadian cities; 21 of these customers are bank holding companies.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Customers use low-speed terminals to access an IBM System/370 Model 155 in St. Louis. There are 130 employees and at least 50 separate subsystems in the system.
- Action operates its own network with over 2,500 terminals specially made in Sunnyvale, CA. The separate network is more economical than joining the others through COMSOURCE.

### ON-LINE SYSTEMS DEVELOPMENT AND OPERATIONS: Minneapolis, MN and other locations reports to D.P. White.

- This group is an internal, technical, network development group whose principal responsibility is the planning and implementation of the on-line services.
- Responsibilities include the integration of communication standards and protocols, planning the development of the future network, and operating the present one.
- This operation works very closely with COMSOURCE.

### COMSOURCE: Minneapolis, MN, reports to Charles W. (Bill) Bahan.

- COMSOURCE (COmon reSOURCE for computing) is the Control Data organization responsible for planning, implementing and operating all internal computers and data centers. Created in 1970, COMSOURCE controls computing equipment utilization throughout CDC by combining the computer operations of CYBERNET Services, corporate internal business data processing, and benchmark and demonstration laboratories. COMSOURCE operates local and remote batch processing systems, as well as conversational and transaction oriented on-line systems. With about 800 employees, it operates in excess of 50 major computing systems in 11 locations.
- SBC assumed management responsibility for COMSOURCE in the summer of 1973 soon after CDC's acquisition of SBC. COMSOURCE allows for greater control and understanding of CDC's internal needs and outside requirements.
- COMSOURCE is organized into four functional areas:
  - Operations Planning
  - Internal Centers
  - Software Services
  - Administration

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Input projects that COMSOURCE will integrate the CDC and SBC networks. Although substantial integration has already been achieved, a fully transparent network will not be implemented for another two years at least.

SERVICE BUREAU COMPANY: (SBC) Greenwich, CT., is headed by President Bob Kleinert.

- In 1957, IBM organized SBC as an independent, wholly owned subsidiary to provide computer services to its clients. In 1969, the timesharing business of IBM was merged into SBC after incurring three years of consecutive losses.
- Hank White, appointed to stem the losses in the timesharing operation, cut back development and concentrated on marketing CALL service, an existing product. The group became profitable six months later.
- In January of 1973, SBC was "acquired" by CDC as part of the settlement of its suit against IBM.
- The main operating divisions are Data Processing Services (DPS), the group responsible for batch operations, and Timesharing responsible mainly for the CALL and CALL PLUS services.

### Healthy Growth in Revenues and Profits

- While the Data Processing Service Division (DPSD) grew from only \$40 million to \$45 million between 1970 and 1975, the Timesharing Division grew from \$6 million to \$53 million during the same time period. At the same time the DPSD was almost completely converted from a set of custom batch services to standard products with centralized control. In this way, the division was converted from a losing to a profitable and powerful entity.
- After a loss in 1970, SBC is estimated to have contributed \$12 million to CDC's profits in 1975. The Timesharing Division contributed an estimated 75% of profit.
- 1976 SBC revenues are expected to reach \$106 million with the Timesharing Division accounting for \$61 million. Total profits are expected to reach \$15 million, mostly from the Timesharing Division.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- In INPUT's opinion at least 25% of SBC's profits will be reinvested into SBC for acquisitions and product development. In 1977, revenues of \$10 million are expected from acquisitions such as CRI and new ventures such as Telemoney, obtained from this reinvestment
- SBC has been given increased responsibility as evidenced by SBC executives being given control over marketing standard CDC services in the U.S. This is in marked contrast to Europe where CDC-Europe, a Network Services Group organization, markets SBC's CALL service.
- This increasing integration is an attempt to streamline and increase profitability in the entire CDC computer services organization.

### SBC's Timesharing Division

- The Timesharing Division is concentrating on large accounts in targeted industries such as communications, finance, banking, insurance, and brokerage. The majority of revenues is generated by application tools in the Application Exchange library; the remainder is derived from user-programmed timesharing, predominantly in Basic.
- The most extensively used product sold by SBC is MINI-MIS, developed internally and introduced in 1972. MINI-MIS is a small scale management information service. A user of MINI-MIS has the capability to inquire, analyze and report on data from files as well as to update and maintain selected data bases.
- PROPHIT, a program licensed from Via Computer, Inc., is another significant product marketed by SBC. PROPHIT aids managers and analysts to plan and analyze business plans and performance. The program can generate a wide variety of applications and reports, including balance sheets, P&L statements and proforma statements.
- INPUT estimates that SBC pays royalties of one to five percent for software products such as PROPHIT which it obtains on an exclusive license basis.

SBC's Expansion into New Markets

- At the ABA conference in 1976, CDC announced the formation of the Telemoney subsidiary. The subsidiary will be run by SBC with a strong marketing push by Commercial Credit Company (CCC).
- The service will link small merchants and banks for credit checking using Telecredit and Validata. It is an initial move by CDC into EFTS.
- As of January 1976, the CDC subsidiary Greenwich Data Systems has been integrated into SBC. This subsidiary consists of a highly specialized group of systems people dedicated to developing computerized applications in the transportation industry. They are experts in PARS and IPARS and were involved in the development of SABRE, PANAMAC and "Wizard of Avis" systems. More recently they have been working with travel agency and hotel/motel reservation systems.
- SBC will probably establish more industry marketing groups similar to FOCUS (for credit unions). There will continue to be a central marketing group, but individual sales personnel will report to local offices as specialized industry experts. CDC recently moved its finance industry services group to SBC to sell to companies functionally similar to Commercial Credit.

AMERICAN RESEARCH BUREAU (ARBITRON): New York, NY, headed by President Ted F. Shaker, with 1975 annual revenues of \$20 million, will generate \$22 million in 1976.

- American Research Bureau is the nation's largest provider of radio and television audience measurement research services. Founded in 1949, it subsequently became part of C-E-I-R. When C-E-I-R was acquired in 1967, ARB (as it was then known) was part of the package.
- More than \$4 billion a year is invested in local and national spot radio and television advertising. More than 1,300 stations and 1,400 agencies and advertisers use ARBITRON reports in buying and selling radio and television commercial time. Twenty-five sales people serve the industry from sales offices in New York, Chicago, Atlanta, Dallas, Los Angeles, San Francisco, and Washington D.C.

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- During its year-round effort to report what Americans watch on television and listen to on the radio, ARBITRON contacts more than 1,300,000 families to obtain viewing and listening information. The results are the ARBITRON Television and ARBITRON Radio rating reports.
- Data processing is performed on twin CDC 3300s and two CDC 1700 computers in the Research and Production Center in Beltsville, Maryland. The computer center is operated by COMSOURCE. Although it has data status, it is almost 100 percent dedicated to ARBITRON.
- Continued growth for ARBITRON will depend on the success of its "monitor" program now being introduced. In this program, 1,000 homes in the top two television markets of New York and Los Angeles will have their television sets connected to a monitoring device. An investment of \$3.5 million was required to establish this program.
- The monitoring device on the back of each set in a home will be connected to a microprocessor (Intel 8080) based unit that will control up to four such devices and act as a communications controller. It will be polled regularly for standard and custom products in order to determine the viewing habits of the owners. Two CDC 1700s will be used in Beltsville to process the monitored data. Hazeltine CRTs are being used to monitor the program.
- Even more significant than "Monitor," which is basically a resurrection of previous monitoring schemes, is ARBITRON's long-term move into market research. ARBITRON already polls the public nationally or in individual cities on a variety of topics. ARBITRON also measures and reports consumer purchase behavior to provide information on product usage and product brand shares in individual markets.
- The provision of the on-line ARBITRON Information on Demand (AID) service is a sign of ARBITRON's relatively new aggressive posture. ARBITRON has for many years refused to make raw data available to clients. Since Shaker arrived, the AID program, providing clients with access to raw diary files, has been introduced.

TICKETRON, INC.: New York, NY, headed by President William J. Schmidt and with 1975 computer services revenues of \$7 million, will generate \$8 million in 1976.

- Ticketron, still in a "development phase," is continuing to lose money. In 1973, it was operating at a loss rate of almost \$500,000 per month when it was acquired for 140,000 shares of CDC stock.
- Ticketron has approximately 1000 terminals consisting of a teletype unit, a keyboard, and a high-speed ticket printer; they are located primarily in shopping centers, banks, and department stores.
- Ticketron is primarily geared to providing tickets for sports and spectator events. In addition a purchaser can obtain boarding passes for AMTRAK and reservations for campsites. Ticketron has also developed the boarding pass system for Pacific Southwest Airlines and tickets for the New Jersey State Lottery and for New York City's Off-Track Betting.
- The service is based on two twin CDC 1700 centers, one in Los Angeles and the other in New York.
- Ticketron plans to move into the turnkey systems business with a Ticketron Arena System that uses a desk-top MP17 Computer with CRT and a high speed printer. This will handle season ticket sales and will later be able to "hook" into the national Ticketron network.
- A major problem with Ticketron is the high cost of communications and delays inherent in a centralized system. Inventories as well as movements have to be communicated over the network for events which are basically local in nature. The logical approach is to establish a distributed processing service with local storage of data bases.

SYSTEMS RESOURCES, INC. (SRI): Dallas, TX, is headed by President Calisaro (acting); its 1976 computer services revenues will not exceed \$1M.

- SRI was acquired by CDC in 1973 for approximately 43,000 shares. SRI provides facilities management, consulting, and data processing systems development for the health care, insurance, and public utilities industries.
- Its main concentration is in the Blue Cross/Blue Shield health insurance programs, and the company has a system supporting these programs for sale.

'CDC' REPORT PROBLEMS - THROUGH BEN KILGORE

- Schedule on page 6-11, <sup>?</sup> source for this - told him 'Marketing Reviews' 1975 plus our estimates. Apparently it is accurate.
- Problem with saying 'SBC the profitable segment of the group' on page -6.2 implies all others are unprofitable
- Page 6-5 says SBC contributes \$15 million also questions the Commercial Credit and ~~universal~~ <sup>insurance</sup> figures, they didn't agree with their published data.
- Page 6.29 says SBC contributed \$20 million in 1975.
- In the introduction we say that they are continually making changes organizationally. That is not the case; the structure has been set for 5 years. ~~Ben's~~ <sup>Basic</sup> elements ACTION, BTSI, SBC, haven't changed.
- The 'Byzantine' and other organizational comments are ill thought out. (Page 6-7)
- Page 6.23 - There is no conflict between Prophet and IFPS. The idea is that organization using CDC's engineering services also ~~meet~~ <sup>need</sup> business packages but don't want to change services.
- Page 6.24 - Never any IBM equipment in Brussels - planned - not actual.
- Stated again it would have been better to give critical opinions as 'opinions' rather than statement of fact.



*old report*

## CONTROL DATA CORPORATION

### INTRODUCTION

- This company analysis focuses on the Systems Data Services and Marketing (SDSM) organization in CDC, which is the group responsible for providing computer services to users.
- Within SDSM the concentration is on the largest organizations providing computer services such as Cybernet and SBC. Other computer services such as Arbitron, Ticketron, Syntonic Technology, and Brokerage Transactions Services Inc. are also analyzed, however, because of their smaller size they are dealt with to a lesser extent. Other non-computer service groups such as systems and peripherals are discussed only to the extent that their activities impact computer services and the network.
- The organization within CDC is changing continually, therefore, although the present organization is shown as accurately as possible the analysis focuses on the functional businesses of the divisions, their services and their strategies, which do not change, rather than the detailed organization structure itself.

## DETAILED COMPANY PROFILE

CONTROL DATA CORPORATION  
8100 34th Avenue South  
Minneapolis, Minnesota 55420  
(612) 853-8100

Chairman and President,  
William C. Norris  
Computer services employees:  
12,000 (E)  
Public Corporation, widely  
held

Total Company and Computer Services Sales of Fiscal  
Year Ending December 31, 1975: \$1,246,369,000  
(Does not include commercial credit with 1975  
revenues of \$675,000,000.)

---

### COMPANY HISTORY AND BACKGROUND:

- Control Data Corporation was organized by William C. Norris in 1957 when the company was incorporated in Minnesota. (Currently the company is registered in Delaware.)
- CDC established its reputation with its scientific computers starting with the 1604 and continuing with the 3000, the 6000, the Cyber series, and the Star 100.
- In the 1960s the company diversified into other businesses such as insurance, commercial credit computer services, and peripherals.
- In 1977 CDC will celebrate its 20th anniversary. By that time its services business will be the largest segment of the total company's business.
- CDC's business may be segmented into three parts.
  - Systems: The largest portion of the systems business is made up of the scientific mainframe manufacturing group. CDC is still the leading manufacturer of large computer systems optimized to solve scientific and engineering problems. Other products are aerospace instruments and controls.
  - Services: Services, the largest and fastest growing segment which in addition to data services includes maintenance, consulting and education, accounted for \$445 million in revenues in 1975. Data services includes Cybernet, the delivery vehicle for a vast array of evolving and changing business services, and SBC, the profitable segment of the group, acquired from IBM.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Peripherals: The CDC peripherals group is supplemented by a series of manufacturing and marketing joint ventures in which CDC is either an equal or a majority partner with companies such as NCR, Honeywell, and ICL.

CDC evolved a business strategy to utilize common R&D and manufacturing facilities in order to obtain favorable economies of scale. This was implemented by developing products which, with some modifications, could be sold to:

- . a captive market through Computer Peripherals Inc. or Magnetic Peripherals Inc. buying for its own needs.
- . the OEM market sold through the OEM sales force.
- . the plug compatible end/user market sold through the end user sales force.

This strategy has been successful and has enabled CDC to become a dominant force in the independent peripheral market.

- Bill Norris, the brilliant and controversial architect of this company has produced a unique company - a company with a wide array of business interests, that has alternately been called "the super computer" company, "the total service" company, and "the financial services" company. CDC's record of earnings has been uneven and its changing image has confused the financial analyst to whom unpredictability is a sin worse than stagnation.

### HISTORY OF COMPUTER SERVICES:

- CDC's computer services have always relied on the largest and most advanced mainframes available from the manufacturing operation. Starting in 1961 with 1604's the network evolved to the CDC 3600's in 1964, which in turn were augmented by the 6000 series in 1967 and gradually replaced by the Cyber series starting in 1973.
- In 1976 the Star 100, CDC's largest and newest array processor, was introduced into the system. In 1977 the Cyber 170 Series will be incorporated.
- In 1967 CDC also acquired CEIR, a computer services firm utilizing IBM and GE timesharing and batch processing equipment. The work performed on these mainframes was subsequently moved to CDC equipment.

December/1976

P-6.3

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- At the same time CDC started developing computer education, professional services, and maintenance finance services through internal growth and through acquisition of companies such as:
  - Howard Research
  - Comma
  - Syntonic Technology
- Bill Norris started emphasizing the "total service" or "multi-service" concept in the fall of 1971 and it was introduced to the field in early 1972. In 1973 IBM gave up SBC to CDC in exchange for the settlement of a law suit and destruction of the index of documents used in the suit.
- The recent activity, culminating in the appointment of Hank White to head up the data services group, has focused on integrating more closely the various data services especially Cybernet and SBC.

December/1976

P-6.4

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

### SUMMARY AND CONCLUSIONS

- The most profitable segments of the CDC business in 1975 were the Commercial Credit group and the Computer Services Company, while the biggest drain on corporate resources has been the casualty insurance company. Commercial credit contributed \$36 million and SBC, an estimated \$15 million in 1975 pre tax earnings while the insurance operations suffered an \$8.3 million loss.
- CDC has invested heavily in research and development. Between 1972 and 1975 the company spent over \$200 million in R&D with 1974 the peak year when CDC spent \$63 million. The 1975 after tax profit in the computer business was only \$9.1 million.
- In its public pronouncements Control Data Corporation indicates a change in its focus from computer equipment to computer services. This is a somewhat misleading statement since most of the research and development dollars go to equipment research whose underlying technology CDC considers essential in the efficient delivery of its data services.
- The joint R&D venture between CDC and NCR, designed to produce a common new mainframe design, at the Advanced Systems Laboratory, slated to be the base of an integrated compatible product line is tapering off.
- Both companies envision a common set of CPU's which would evolve into systems which will be programmed, manufactured, and marketed independently.
- Initially CDC was to market the high end of the line and NCR, the low end. The specifics, however, were only agreed upon in vague terms. Where one product would begin and the other end was never clearly stated. The fact that CDC's average system rents for 40K per month, and is primarily sold to scientific users, while NCR's systems rent for less than 10K per month on the average, and are marketed to EDP users. It is hoped this will keep the two companies from direct confrontation.
- CDC expects to gradually incorporate the commonly developed technologies into its new products over the next five years. Although the original goal of a compatible product line may never be fully realized, it is likely that in the distributed architecture environment of the future, common functional processors will appear in the systems built by both companies.

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- The largest mainframe in CDC's arsenal is the Star 100, a very large string array processor which has been sold to NASA and has also been connected into the Cybernet network.
- CDC generates one third of its business overseas.
- In addition to selling mainframes and peripherals in the international market CDC also provides a variety of computer related services to companies abroad. The overseas business exposes the company to foreign exchange fluctuations which will impact the 1976 earnings.
- CDC has joint ventures overseas as well as domestically. The overseas ventures are with both foreign companies and foreign governments. Following is a list of CDC's joint ventures:

NAME OF COMPANY	PARTNERS	COUNTRY	MAJOR PRODUCT OR SERVICE
Magnetic Peripherals, Inc.	CDC Honeywell	U.S.	Rotating Memories
Computer Peripherals, Inc.	CDC, NCR, ICL	U.K. U.S.	Punch card equipment printers, mass storage devices, magnetic tape drives, tape cassettes drives, flopps disk drives
Elbit	CDC 55%	Israel	Minicomputers, peripherals
Micro-Bit	CDC, ICL, Nixdorf, Plessey	U.K. Germany	Semiconductor manufacturing
Control Dataset	CDC, ICL	U.K.	Manufacture disks magnetic tapes
Data SRL	CDC, Romania	Romania	Peripheral equipment, manufacturing

In addition CDC has been doing research for several years under a research grant of \$25 million received from the Canadian government. A \$15 million contract was also received from Iran in 1975 to develop educational facilities and equipment.

- Joint ventures are a double edged sword and the multiple ventures in which CDC is involved are basically with competitors. Therefore the inherent dangers are obvious. As long as the original partners who signed the agreement are present, the venture may continue to run smoothly, however, when the original people are replaced, problems are likely to arise.

The CDC organization is Byzantine in its complexity.

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- All major decisions flow upwards through a series of management levels and often no decisions can be made or implemented until one or more vice presidents get involved.
- Responsibility for functions such as education, products, and servicing reside in three different organizations whose charters and activities seem to overlap.
- This type of organization works while a company is growing and the Chief Executive wants to be involved in all decisions. However, now that Norris is 65, there is a need to plan better and push decision making closer to where the action is.

### GROWTH AND SEGMENTATION OF COMPUTER SERVICES:

- CDC has placed major emphasis on its computer services business during the last five years (see Exhibit I). The most rapid growth year was 1973 when CDC acquired, for \$32 million, businesses generating over \$90 million in revenues. The Service Bureau Company, with revenues of \$63 million in 1973 and after tax profits of \$1.5 million, was acquired then as part of the IBM settlement package. Discounting acquisitions, CDC's computer services are growing at 20 percent per year.
- The 1975 computer services revenues distribution is shown in Exhibit II. Data services revenues are also segmented by processing accounts for almost 50% of revenues and is the largest contributor to CDC's data services revenues. An analysis of Cybernet service revenues is presented in Exhibit III.
- Maintenance services provided to CDC's own systems customers ("captive" revenues), are included in the computer services revenues of \$500 million. (see Exhibit I.)
- The data services group, the largest segment of the company (see Exhibit II) will assume an even greater cohesion now that Hank White has total responsibility for Cybernet, SBC, and developing services.
- This change in management will help to focus resources, integrate the groups wherever that is practical, and eliminate duplications.
- An integrated operating system merging SCOPE and KRONOS into a single user oriented multi-mode system is being developed gradually. The data for integration is probably 24 to 36 months in the future. The current marketing strategy is based on

December/1976

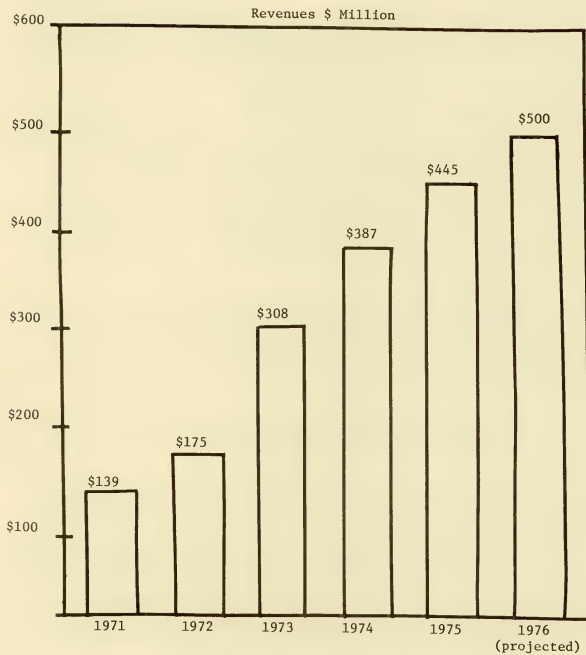
P-6.7

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT I

COMPUTER SERVICES REVENUE GROWTH



December/1976

P-6.8

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT II

CDC COMPUTER SERVICES REVENUE DISTRIBUTION 1975 AND 1976

Revenues \$ Millions

	1975	1976 E
<u>DATA SERVICES</u>		
Established Services:		
Service Bureau Company	\$ 98	\$106
CYBERNET Services (worldwide)	76	83
Sub-Total	\$174	\$189
Application Services:		
ARBITRON	\$ 20	\$ 22
Action Data Services	12	10
Brokerage Transaction Services	4	4.5
Sub-Total	\$ 36	\$ 36.5
Developing Services:		
Automatic Wagering	\$ 1	\$ 1
Compu/Net	1	1
Reservation Services	2	2
System Resource Inc.	< 1	1
Ticketron	7	8
Other	< 2	12
Sub-Total	\$ 13	\$ 25
Sub-Total	\$223	\$250.5
<u>ENGINEERING SERVICES</u>		
Sub-Total	\$159	\$178
<u>PROFESSIONAL SERVICES</u>		
Sub-Total	\$ 38	\$ 42
<u>EDUCATION SERVICES</u>		
Sub-Total	\$ 25	\$ 30
<u>TOTAL</u>	\$445	\$500

December/1976

P-6.9

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT III

CDC DATA SERVICES REVENUE DISTRIBUTION 1976 (E)

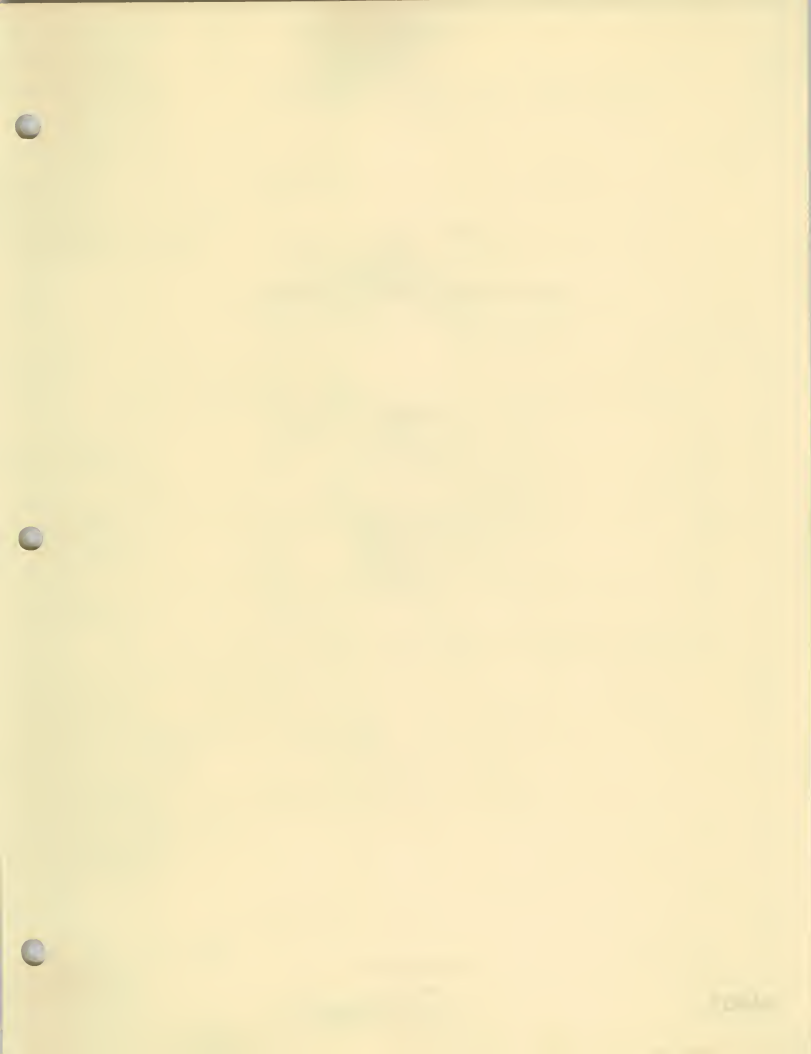
(REVENUES \$ MILLIONS)

SERVICE	PROCESSING MODE				
	TIMESHARING	REMOTE BATCH	BATCH	FM	TOTAL
Service Bureau Co.	\$53	\$ 8	\$ 45	--	\$106
CYBERNET Services:					
U.S.	15	17	13	--	45
Europe	5	8	15	--	28
Other	--	2	8	--	<u>10</u>
					83
Arbitron	1	--	21	--	22
Action Data Services	10	--	--	--	10
Brokerage Transaction	--	--	< 5	< 1	4.5
Automated Wagering	--	--	--	1	1
Compu/Net	1	--	--	--	1
Reservations Services	2	--	--	--	2
Systems Resources, Inc.	--	--	< 1	< 1	< 1
Ticketron	--	8	--	--	8
Other	--	10	2	--	12
TOTALS	\$87	\$53	\$110	\$2	\$ 250.5

December/1976

P-6.10

INPUT



DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT IV

SEGMENTATION OF REVENUES BY APPLICATIONS  
WITHIN CYBERNET (WORLDWIDE) 1976 (E)

Structural Engineering	55%
Data Base Applications	21%
Management Sciences	14%
Electrical Engineering	3%
Financial Programs	2%
Graphics	5%
TOTAL	<u>100%</u>

December/1976

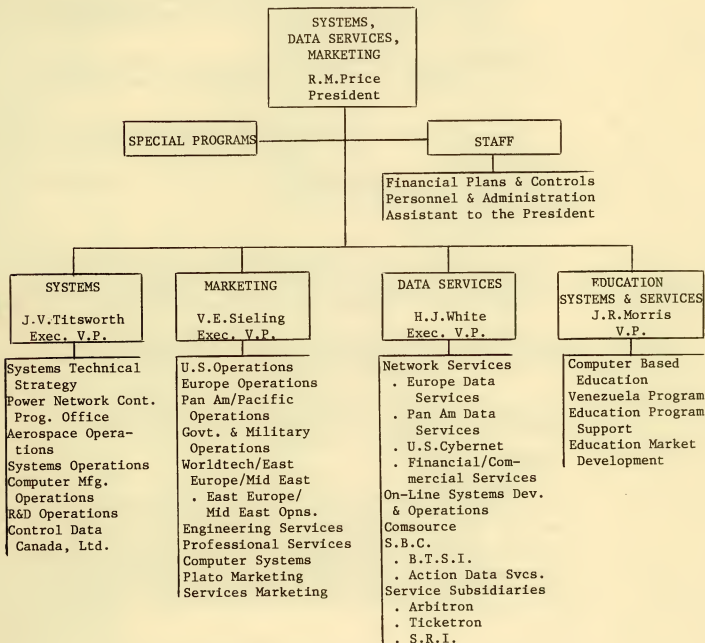
P-6.12

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT V

SYSTEMS, DATA SERVICES, MARKETING ORGANIZATION



## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Cybernet offers two main processing services through its network of 20+ "supercomputers."
  - SCOPE services provide remote batch and local batch processing.
  - KRONOS services provide four processing modes; interactive, remote batch, deferred batch, and CDC CYBERLINK Communications Interchange.
- SCOPE services are offered at all CDC centers. KRONOS, supported in the U.S., Canada, and Brazil by the Rockville, Maryland center, is also offered in Australia and Europe.
- The CYBER 76 Service is based on a CYBER 76 in Minneapolis and is a remote batch service offered only in the U.S.
- CDC introduced its STAR 100 Service from its Arden Hills facility in Minneapolis on September 14, 1976.

### CYBER 76 Service

- Introduced in late 1974, CYBER 76 service is continuing to build revenues. Typical applications are those requiring large numbers of crunching capabilities including reservoir simulation, structural analysis, linear programming, and nuclear reactor analysis.
- CDC Cyberlink Communications Interchange between Cyber 76 and KRONOS is available. Cyber 76 can also be accessed through IBM HASP multileaving protocol.
- Cyber 76 Service offers very large computing capacity and rapid turnaround for cost-effective solutions. The service will be expanded to meet market demands.

### CYBERNET Services

- All the major mainframes in the Cybernet network are CDC Cyber 70, 170 or 6000-series computers, operating either under the SCOPE or KRONOS Operating Systems. SCOPE is a batch system that offers local and remote processing and is generally installed on the more powerful mainframes in the network. A library of batch applications programs is resident on each SCOPE system. KRONOS time-sharing systems in the network offer interactive processing in addition to local and remote batch.
- The Cybernet time-sharing service allows the user to process data one line at a time, interacting with the system in either FORTRAN or BASIC. KRONOS includes a library of more than 100 programs for solving problems in mathematics, statistics, finance

December/1976

P-6.14

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

and engineering.

- System 2000 data management software, STRUPAK programs to solve structural engineering problems, IFMS financial planning system, APEX III linear programming package and many other packages are offered on the system.
- The user has the option to submit a job to the batch queue of the time-sharing system. This capability allows the user to program in several other languages, including COBOL AND SIMSCRIPT. Jobs executed in batch mode on this system are normally limited to 52,000 words of CPU memory, but have access to time-sharing mode files.
- Cyberlink Interchange allows a user to process batch jobs requiring more than 52,000 words of CPU memory. Alternately the user can process batch applications programs under SCOPE. Some of the SCOPE programs have been modified to make them easily accessible to the time-sharing user via Cyberlink; others, may require a knowledge of special file-handling procedures.
- The Cyberlink Interchange consists of high-speed telecommunications lines (7,200 to 40,800 baud) that link the Cybernet time-sharing batch processing systems and the software that enables data transfer.
- Under Cyberlink, a job stream submitted to one computer is transmitted to another computer where it is defined as a local job stream with a remote origin. This multi-system based on core-to-core linkages has the following advantages:
  - Resources of one operating system are available to users of another operating system for both normal and overflow processing.
  - Computer network applications are available to submit, compile, and execute a job at different locations without switching the data paths.
  - Extremely fast data transfers can be made from one computer to another.
  - There is no need to transport or separately transmit intermediate storage media.
- Cyberlink provides two major advantages to the traditional SCOPE batch user:
  - The user can edit his input and initiate a batch program from an interactive terminal.
  - Output can be sampled and verified before being transmitted in full.

December/1976

P-6.15

INPUT

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Job turnaround can thus be significantly shortened by establishing the validity of the output before transmission. After verification the finished output can be routed to any batch terminal on the network - be it users, office, or the line printer at a central site.
- Cyberlink provides a variety of options for data storage input and output. Files can be stored on either the SCOPE or KRONOS system. A job for batch execution can be composed of files from both systems. Files that are frequently modified can be stored on the time-sharing system, updated during interactive processing, and then transferred to the batch processing system to be used as needed. Modifications to SCOPE files can be received at the user's interactive terminal, and redirected to any terminal in the Cybernet Network, or to any central site.
- Cyberlink is available to any Cybernet time-sharing user in North America, Europe, and Australia.

### STAR-100 Service

- CDC introduced its STAR-100 Service in 1976. Equipped with four million bytes of directly-addressable memory plus a virtual memory capability, the STAR-100 employs stream processing, virtual addressing, hardware macro processing and a large semiconductor memory register file. Processing is normal sequential processing or parallel processing up to 64-bit work vectors.
- Customers can access the service through a front-ended CDC 6400 Computer System. User programs can be written in FORTRAN, and enhanced by vector language extensions.
- A primary advantage of Cybernet's new STAR-100 service is much faster job processing by redesigning old programs to employ vector techniques. For example, STAR processes one program four times faster than a vectorized CDC 7600 does (which, in turn, is twice as fast as a regular 7600 which is four to five times as fast as a 6600). The price to use the STAR 100 ranges from \$1500 to \$7500 per hour.
- Organizations with problems in the areas of structural engineering, reservoir engineering, load flow analysis, cable routing/optimization, environmental (weather) analysis, econometrics, structural design of aircraft, earthquake predictions, and energy physics are among the first clients for the STAR-100 series.

December/1976

P-6.16

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

### Sales Offices

- Cybernet services are sold in the U.S. through 49 branch sales offices, 23 district sales offices and 5 regional sales offices. Each region also has a coterminous District and Branch organization. Therefore there are 77 sales outlets listed in Exhibit VI

### Equipment Used

- CDC is in the process of replacing its older 6400/6600 computers with CYBER 170s. These will be in addition to the CYBER 73 and 74 computers now in place.
- There are 7 domestic Cybernet centers and 1 in Canada.

LOCATION	EQUIPMENT
Rockville, MD	2 CDC CYBER 73 2 CDC 6600 (Being replaced by CYBER 175)
New York, NY	1 CDC 6600
Boston, MA	1 CDC 6600
Houston, TX	1 CDC CYBER 74 1 CDC 6600
Minneapolis, MN	1 CDC 6600 1 CDC CYBER 76 1 CDC STAR 100
Los Angeles, CA	1 CDC 6600 2 CDC 6400 (COMPU/NET)
Sunnyvale, CA	2 CDC 6600 CDC CYBER 175

- In addition there are over 50 remote batch processing sites including public terminals where customers can take their work for submission to the systems.

### Operating Systems

- CDC is presently offering two main operating systems on CYBER

December/1976

P-6.17

INPUT

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

## EXHIBIT VI

CDC SALES OFFICES AND DATA CENTERS

CITY	CYBERNET		SERVICE BUREAU COMPANY	
	BRANCH OFFICES	DISTRICT OFFICES	DATA CENTERS	SALES OFFICES
Akron, OH				•
Albuquerque, NM		•		
Arlington, VA		•		
Atlanta, GA	•		•	•
Baltimore, MD			•	•
Bethlehem, PA	•			
Birmingham, AL			•	
Boston, MA				•
Boulder, CO	•			
Brandon, MS	•			
Buffalo, NY			•	
Camp Hill, PA	•			
Campbell, CA (LAB)				•
Carle Place, NY			•	
Charlotte, NC		•	•	
Chicago, IL		•	•	•
Cincinnati, OH		•	•	•
Cleveland, OH	•			•
Cocoa Beach, FL	•			
Columbus, OH	•			•
Coral Gables, FL	•			
Dallas, TX		•	•	•
Dayton, OH	•	•		

December/1976

P-6.18

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VI (continued)

CDC SALES OFFICES AND DATA CENTERS

CITY	CYBERNET		SERVICE BUREAU COMPANY	
	BRANCH OFFICES	DISTRICT OFFICES	DATA CENTERS	SALES OFFICES
Denver, CO				•
Des Moines, IA	•			
Detroit, MI				•
Downey, CA		•		
East Orange, NJ			•	
Encino, CA			•	
Englewood, CO		•	•	
Erie, PA			•	
Farmington, CT			•	
Glastonbury, CT		•		
Greensboro, NC	•			
Greenwich, CT				•
Hampton, VA	•			
Hartford, CT				•
Hato Rey, Puerto Rico			•	
Honolulu, HI		•	•	
Houston, TX	•	•*	•	•
Huntsville, AL	•			
Idaho Falls, ID	•			
Indianapolis, IN	•			•
Ingelwood, CA			•	
Jacksonville, FL				•
Kansas City, KS		•	•	

\*Regional Sales Office - Southern

December/1976

P-6. 19

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VI (continued)

CDC SALES OFFICES AND DATA CENTERS

	CYBERNET		SERVICE BUREAU COMPANY	
CITY	BRANCH OFFICES	DISTRICT OFFICES	DATA CENTERS	SALES OFFICES
Knoxville, TN	•			
Lakewood, OH			•	
Lansing, MI			•	
Las Vegas, NV	•			
Latham, NY	•			
Little Rock, AR	•		•	
Livermore, CA	•			
Liverpool, NY	•			
Los Alamos, NM	•			
Los Angeles, CA		• *		
Lynchburg, VA	•			
Melville, LI (NY)		•		
Memphis, TN	•			•
Milwaukee, WI	•		•	•
Minneapolis, MN		• **	•	•
Monterey, CA	•			
Nashville, TN	•			
New York City, NY		•	•	•
New York, Metro.Area				•
Newark, NJ		• ***		
Newport Beach, CA				•
Oakbrook, IL		•		
Oakland, CA	•			

\*Regional Sales Office - Western District

\*\*Regional Sales Office - Mid West

\*\*\*Regional Sales Office - Eastern

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VI (continued)

CDC SALES OFFICES AND DATA CENTERS

	CYBERNET		SERVICE BUREAU COMPANY	
CITY	BRANCH OFFICES	DISTRICT OFFICES	DATA CENTERS	SALES OFFICES
Oklahoma City, OK		•	•	
Omaha, NE			•	•
Orlando, FL		•		
Philadelphia, PA		•	•	•
Phoenix, AZ				•
Pittsburgh, PA		•	•	•
Portland, OR	•		•	•
Poughkeepsie, NY			•	
Reno, NV	•			
Renton, WA		•		
Richland, WA	•			
Richmond, VA	•		•	•
Rochester, NY	•		•	•
Rockville, MD		• *		
Sacramento, CA		•		
Saddle Brook, NJ				•
St. Louis, MO	•		•	•
Salt Lake City, UT	•			
San Antonio, TX	•		•	
San Diego, CA			•	•
San Francisco, CA		•	•	•
Santa Ana, CA	•			
Santa Maria, CA	•			

\*Regional Sales Office - Washington

December/1976

P-6.21

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

EXHIBIT VI (continued)

CDC SALES OFFICES AND DATA CENTERS

CITY	CYBERNET		SERVICE BUREAU COMPANY	
	BRANCH OFFICES	DISTRICT OFFICES	DATA CENTERS	SALES OFFICES
Seattle, WA			•	•
Southfield, MI		•	•	
Snyder, NY (Buffalo)	•			
Tallahassee, FL	•			
Tempe, AZ	•			
Towson, MD	•			
Tucson, AZ	•			
Tulsa, OK	•			
Wakefield, MA			•	
Waltham, MA		•		
Washington, D.C.	•		•	•

December/1976

P-6.22

INPUT

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

computers called NOX, evolved from KRONOS, and NOS/BE, evolved from SCOPE 3.4; in addition it used SCOPE 2.1 for its CYBER 76 Service. CDC has been working for the past three years trying to integrate the two systems. Final integration seems to still be about two years away according to CDC management.

### CYBER Software

- None of its structural engineering packages are "made" by CDC. In fact, most application products are obtained from third parties. Cybernet stopped application software developments in the mid-60s because of lack of funds.
- Some examples of package sources are:
  - ANSYS - Swanson Analysis Systems
  - CDC/NASTRAN - developed by CDC under contract to NASA, supported by MacNeal Swendler Corporation (Los Angeles)
  - MRI/STARDYNE - developed by Mechanics Research Inc. (Los Angeles)
  - MARC-CDC - developed by the MARC Analysis Research Corporation (Providence, RI)
  - ADLPIPE - developed by Arthur D. Little, Inc. (Cambridge, MA)
  - MITAS - Martin-Marietta's version of CINDA-3G
  - PICES TM - Physics International Company (San Leandro, CA)
- CDC has, however, developed system products such as:
  - APEX, a mathematical programming system
  - ATHENA, an on-line query language for TOTAL, (the Cincom data base manager).
- IFPS was developed by EXECUCOM Systems Corporation (Austin, Texas) and is CYBERNET's entry into the financial planning and management area. Despite the fact it is in apparent competition with PROPHIT and other SBC products in BIS-PAC, CDC insists that there is no direct duplication of effort between Cybernet and SBC.
- Cybernet services depend heavily on a relatively few (10-15) large customers for up to 50% of its U.S. revenues. Included in this group are Bechtel, Hughes Aircraft, NASA-AMES, NCR, and TVA. Cybernet also serves a large number of engineering and architectural firms where the revenue stream is irregular.
- There are, at present, over 1100 FOB (access points) in the CALL/KRONOS network. CDC/SBC is in the process of installing dynamic routing so that KRONOS, CALL/370 and CALL/PLUS will share a common

December/1976

P-6.23

INPUT

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

telephone number at each FOB point. Users designate the service and the network processor routes traffic accordingly.

- Projected growth of Cybernet services is:
  - Remote Batch 10%
  - Timesharing 30%
- T/S services are being promoted in the business area with increasing success.
- A major problem with Cybernet services was a cumbersome and inefficient organization with layer upon layer of "coordinators" being added. The number of people in Cybernet was reduced by one-third, eliminating some of the middle management functions and simplifying reporting lines. This has made the organization more efficient.
- Cybernet has a unique powerful computing service with a strong back-up staff in the engineering disciplines.

EUROPE DATA SERVICES, headed by Vice President D. L. Bickel, had 1975 Computer Services Revenues of \$27 million and is expected to reach \$28 million in 1976.

- Cybernet Service in Europe had been growing at the rate of 40% per year between 1972 and 1975, without any acquisitions since the ITT service business acquisition in 1973. In 1975 CDC Europe was "on-target" with revenues of \$27 million, unlike the other Cybernet operations. Since then, however, business has been slipping partly as a result of economic slowdowns in England and France. D.L. Bickel is the recent appointee responsible for getting business back on track.
- In mid-April 1976 CDC opened its Brussels "cluster" center. The center houses 2 IBM System/370 Model 158s and 2 Cyber 70 Model 73s. The IBM system supports CALL/CDC, the European equivalent of CALL/370; the other is a communications network processor.
- The Cyber 70s provide KRONOS Timesharing transferred from The Hague Cybernet center. By the end of 1976 all SCOPE batch processing centers will have to be connected to the KRONOS service. Local access to KRONOS is available in the following 12 major metropolitan areas and throughout the Netherlands:
  - London and Manchester, England
  - Paris, France
  - Frankfurt, Munich, Stuttgart, Dusseldorf, and Hamburg, Germany

December/1976

P-6,24

INPUT

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Stockholm, Sweden
  - Oslo, Norway
  - Copenhagen, Denmark
  - Zurich, Switzerland
- The majority (90%) of CDC Europe's data services revenues came from batch and remote batch processing at:

LOCATION	EQUIPMENT	COUNTRIES SERVED
London	2 IBM 360 Systems - Model 65 and Model 75	United Kingdom
Paris	1 CDC CYBER 70 Model 74	France
Frankfurt	2 CDC 6600	W. Germany, Austria
Stockholm	1 CDC 6600	Denmark, Norway, Finland, and Sweden
The Hague	1 CDC 6600	Belgium, Netherlands, Sweden United Kingdom (scope)

- Each center has its own network of terminals.
- Most of the revenues obtained are from "utility" sales, primarily in engineering disciplines. The U.K. is heavy in business processing because of the ITT acquisition.
- Cybernet employs about 550 persons in Europe - 80 in sales and 60 support analysts.

PAN AM DATA SERVICES (PADS), headed by Vice President Peter Van Beek, generated 1975 computer services revenues of \$9 million and will reach \$10 million in 1976. Pan Am Data Services (PADS) was, until the establishment's announcement of Data Services Far East, responsible for all Cybernet services outside the U.S. and Europe. Now Hank White is responsible for Cybernet services in Japan.

December/1976

P-6.25

INPUT

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- PADS locations are shown below:

COUNTRY	COMPUTER SYSTEM	EVALUATION
Australia	CDC 6600 in Sydney (SCOPE) CDC CYBER 70 74 in Melbourne (SCOPE) CDC CYBER 70 73 in Melbourne (KRONOS)	Established and Profitable
Canada	CDC CYBER 70 74 in Toronto (SCOPE)	Established and Profitable
Mexico	CDC 3300 in Mexico City	Weak
Brazil	2x IBM SYSTEM/360 Model 50 in Sao Paulo and CDC 6600 in Rio de Janeiro	High Potential
South Africa	CDC SYBER 74 in Pretoria (in joint venture with ISCOR)	Just Evolving

- In Brazil KRONOS services are offered directly and via satellite from Rockville, Maryland.

FINANCIAL/COMMERCIAL SERVICES, headed by Vice President G. J. Hobbs, had 1975 Computer Services Revenues of \$32 million, growing to \$42 million in 1976.

- This organization is basically the Industry Management Office which has become a line function. It is composed of miscellaneous industry specialized services which, for the most part, use CDC computers. These include services in the following industries:
  - Computer Finance - ACTION Data Services (see following description)
  - Brokerage - Brokerage Transaction Services, Inc. which includes Davidsohn Computer Services (see following description)
  - Insurance - In start up mode at present with a Home Office CYBERDATA insurance system. It has been installed at Hanover Insurance Company of Worcester, Massachusetts and at Calvert Insurance Company of Baltimore. CYBERDATA is a Property and Casualty Insurance system.

December/1976

P-6.26

INPUT

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Banking - responsible for producing EFT proposals and also for operation of the former C-E-I-R banking operation in Los Angeles. This operation provides services to 10-12 banks with about 25 branches. This group appears to be geographically limited and without significant corporate support.
- Transportation - no known products or revenues with the exception of the Washington Metropolitan Area Transit Authority (METRO) which is primarily an equipment contract.
- Services - Commercial Data has its overall objectives to develop and introduce applications services products in general or commercial business. In other words, to implement cross-industry products within network services.

ON-LINE SYSTEMS DEVELOPMENT AND OPERATIONS: Minneapolis, MN and reports to D. P. White.

- This new group is an internal technical network development group whose principal responsibility is the planning and implementation of the on-line services.
- Responsibilities include the integration of communication standards, protocols, and planning the development of the future network as well as responsibility for operating the present one.
- This operation works very closely with COMSOURCE.

COMSOURCE: Minneapolis, MN, reports to Charles W. (Bill) Bahan.

- COMSOURCE (Common reSOURCE for computing) is the Control Data organization responsible for planning, implementing and operating all internal computers and data centers for CDC. Created in 1970, COMSOURCE controls the utilization of computing equipment throughout CDC by combining the computer operations of CYBERNET Services, corporate internal business data processing, and the benchmark and demonstration laboratories. COMSOURCE operates batch processing systems, both local and remote, as well as conversational and transaction oriented on-line systems. With about 800 employees, it runs in excess of 50 major computing systems in 11 locations.
- SBC assumed management responsibility for COMSOURCE in the summer of 1973, soon after CDC's acquisition of SBC. Organized along functional lines, COMSOURCE allows for greater control and understanding of the requirements of CDC's internal needs and outside requirements.

December/1976

P-6.27

INPUT

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- COMSOURCE's organization consists of four functional areas:
  - Operations Planning
  - Internal Centers
  - Software Services
  - Administration
- COMSOURCE will integrate the CDC and SDC networks. Although substantial integration has already been achieved, a fully transparent network will not be implemented for another two years.
- All of the four areas report to Charles W. (Bill) Bahan, Vice President, COMSOURCE, as do the managers of seven of the eight CYBERNET centers. The eighth CYBERNET center manager (Twin Cities) reports to Charles Crichton, CDC manager of internal centers, because of shared equipment and facilities.

### SERVICE BUREAU COMPANY: (SBC) Greenwich, CT., President-Bob Kleinert SBC -

- In 1957, IBM organized SBC as a wholly owned independent subsidiary to provide computer services to its clients. In 1969, the Time-sharing Business of IBM was merged into SBC after the group incurred three years of consecutive losses.
- Hank White, who was appointed to stem the losses in the time-sharing operation, cut back development and concentrated on marketing Call service, an existing product. The group became profitable six months later.
- In January of 1973, SBC was "acquired" by CDC as part of the settlement of its suit against IBM.
- The division between Data Processing Services (DPS), the group responsible for Batch Operations, and the Timesharing group has persisted.

### Healthy Growth in Revenues and Profits

- While the Data Processing Service Division grew from only 40 to 45 million between 1970 and 1975, the Timesharing Division grew from 6 to 53 million during the same time period. At the same time the DPS division was almost completely converted from a set of "custom" batch services to standard products with centralized control. In this way, the division was converted from a loser to a profitable and powerful entity.

December/1976

P-6,28

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- From a loss in 1970, SBC is estimated to have contributed \$20 million to CDC's profits in 1975. The Timesharing Division is estimated to have contributed 75% of the profits.
- 1976 SBC revenues are expected to reach \$106 million with the Timesharing Division accounting for \$61 million. Total profits are expected to reach \$15 million, mostly from the Timesharing Division.
- SBC is now integrated more closely into the CDC Data Services Organization and its profit is now charged with corporate allocations. At least 25% of SBC's profits will be plowed back into SBC for acquisitions and product development. In 1977, revenues of \$10 million are expected from acquisitions, such as CRI and new ventures, such as Telemoney, obtained from this reinvestment.
- The increased responsibility given to SBC is evidenced by the fact that SBC executives have been given control over marketing standard CDC services. This is marked contrast to Europe where CDC-Europe, a Network Services Group organization, markets SBC's CALL service.
- This increasing integration is an attempt to streamline and make more profitable the entire CDC computer services organization.

### SBC's Timesharing Division

- The Timesharing Division is concentrating on large accounts in targeted industries such as communications, finance, banking, insurance, and brokerage. The majority of revenues are generated by application tools in the Application Exchange library; the remainder is derived from user-programmed timesharing, predominantly in Basic.
- The most extensively used product sold by SBC is MINI-MIS, developed internally and introduced in 1972. MINI-MIS is a small scale management information service. A user of MINI-MIS has the capability to inquire, analyze and report on data from files and update and maintain selected data bases.
- PROPHIT, a program licensed from Via Computer, Inc., is another significant product marketed by SBC. PROPHIT aids managers and analysts to plan and analyze business plans and performance. The program can generate a wide variety of applications and reports, including balance sheets, P&L statements, proforma statements, etc.
- SBC pays royalties of between one to five percent for software products such as PROPHIT which it obtains on an exclusive license basis.

December/1976

P-6.29

INPUT

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

### SBC's Expansion into New Markets

- At the ABA conference in 1976, CDC announced the formation of the Telemoney subsidiary. The subsidiary will be run by SBC with a strong marketing push by Commercial Credit Company (CCC).
- The service will link small merchants and banks for credit checking using Telecredit and Validata. It is an initial move by CDC into EFTS.
- As of January, 1976, the CDC subsidiary Greenwich Data Systems has been integrated into SBC. This subsidiary consists of a highly specialized group of systems people dedicated to developing computerized applications in the transportation industry. They are experts in PARS and IPARS, and were involved in the development of SABRE, PANAMAC, and "Wizard of Avis" systems. More recently they have been working with the travel agency and hotel/motel reservation systems.
- SBC will establish more industry marketing groups similar to FOCUS (for credit unions). There will continue to be a central marketing group, but individual sales personnel will report to local offices as specialized industry experts. CDC recently moved its finance industry services group to SBC, to sell to companies functionally similar to Commercial Credit.

BROKERAGE TRANSACTION SERVICES, INC. (BTSI): New York, NY, headed by John O. Bryen, President, had 1975 Computer Services Revenues of \$4 million, and is expected to generate \$4.5 million in 1976.

- BTSI was formed in 1970 to provide computer services to the brokerage community. Using dual CDC 3300 with CDC 1700 front ends, BTSI provides message switching and order matching services. Approximately 15% of the branch offices of NYSE member firms are served by the order match service.
- Merged into BTSI in 1974 were the brokerage accounting services consolidated from Service Bureau Company. These services are provided to about 25 firms in various U.S. cities using IBM System/360 Model 65 and Model 40 processors.
- Davidsohn Computer Services, Inc., a wholly owned subsidiary of CDC acquired in 1974, was merged into BTSI in 1975 with annual revenues when acquired of about \$1 million.
- Total BTSI revenues were \$4 million in 1975, representing about 20% of the market. ADP and Mid West Services control the other 70% of the market.

December/1976

P-6. 30

## DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- BTSI is expanding into the trust departments and other investment areas of banks.

ACTION DATA SERVICES: St. Louis, MO, headed by General Manager, W. J. Ernst. 1975 annual revenues of \$12 million is expected to generate \$10 million in 1976.

- Action Data Services, acquired from ITT in 1973, provides consumer finance services to over 40 customers in 47 U.S. and Canada; 21 of these customers are bank holding companies.
- Customers use low speed terminals to access an IBM System/370 Model 155 in St. Louis. There are 130 employees and at least 50 separate subsystems in the system. The terminals are specially made in Sunnyvale, CA.
- Action operates its own network; it is more economical than joining the others through COMSOURCE. It has over 2500 terminals connected into the network.

AMERICAN RESEARCH BUREAU (Arbitron): New York, NY, headed by President Ted F. Shaker, with 1975 annual revenues of \$20 million, will generate \$22 million in 1976.

- American Research Bureau is the nation's largest provider of radio and television audience measurement research services. Founded in 1949, it subsequently became part of C-E-I-R. When C-E-I-R was acquired in 1967, ARB, as it was then known, was part of the package.
- Over \$4 billion a year is invested in local and national spot radio and television advertising, and more than 1,300 stations and 1,400 agencies and advertisers use Arbitron reports in buying and selling radio and television commercial time. Twenty-five sales people serve the industry from sales offices in New York, Chicago, Atlanta, Dallas, Los Angeles, San Francisco, and Washington, D.C.
- During its year-round effort to report what Americans watch on television and listen to on the radio, Arbitron contacts more than 1,300,000 families to obtain viewing and listening information. The results are the Arbitron Television and Arbitron Radio rating reports.
- Data processing is performed on twin CDC 3300 and two CDC 1700 computers in the Research and Production Center in Beltsville, Maryland. The computer center is operated by COMSOURCE; although it has data center status, it is almost 100 percent dedicated to Arbitron.

December/1976

DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- Continued growth for Arbitron will depend on the success of its "Monitor" program now being introduced. In this program, 1,000 homes in the top two television markets of New York and Los Angeles will have their television sets connected to a monitoring device. An investment of \$3.5 million was required to establish this program.
- The monitoring device on the back of each set in a home will be connected to a microprocessor (Intel 8080) based unit that will control up to four such devices and act as a communications controller. It will be polled regularly for standard and custom products in order to determine the viewing habits of the owners. Two CDC 1700's will be used in Beltsville to process the monitored data. Hazeltine CRTs are being used to monitor the program.
- Even more significant than "Monitor," which is basically a resurrection of previous monitoring schemes, is the long term move of Arbitron into market research. Arbitron already polls the public nationally or in individual cities on a variety of topics. Arbitron also measures and reports consumer purchase behavior to provide information on product usage and product brand shares in individual markets.
- The provision of the on-line Arbitron Information on Demand (AID) service is a sign of Arbitron's relatively new aggressive posture. Arbitron has for many years refused to make raw data available to clients. Since Shaker arrived, the AID program, providing clients with access to raw diary files, has been introduced.

TICKETRON, INC.: New York, NY, headed by President William J. Schmitt, with 1975 computer services revenues of \$7 million and will generate \$8 million in 1976.

- Ticketron, still in a "development phase," is continuing to lose money. In 1973, it was operating at a loss rate of almost \$500,000 per month when it was acquired for 140,000 shares of CDC stock.
- Ticketron has approximately 1000 terminals consisting of a teletype unit, keyboard and a high-speed ticket printer, located primarily in shopping centers, banks, and department stores.
- Ticketron is primarily geared to providing tickets for sports and spectator events. In addition a purchaser can obtain boarding passes for AMTRAK, reservations for campsites, and Ticketron has also developed the boarding pass system for Pacific Southwest Airlines, tickets for the New Jersey State Lottery and New York City's Off-Track Betting.

December/1976

P-6.32

# DETAILED COMPANY PROFILE/CONTROL DATA CORPORATION

- The service is based on two twin CDC 1700 centers, one in Los Angeles and the other in New York.
- Ticketron plans to move into the turnkey systems business with a Ticketron Arena System using a desk-top MP17 Computer with CRT and high speed printer. This will handle season ticket sales and will later be able to "hook" into the national Ticketron network.
- A major problem with Ticketron is the high cost of communications and delays inherent in a centralized system. Inventories as well as movements have to be communicated over the network for events which are basically local in nature. The logical approach is to establish a distributed processing service with local storage of data bases.

SYSTEMS RESOURCES, INC.(SRI): Dallas, TX, headed by President J.A.Calisaro (acting), 1976 computer services revenues will not exceed \$1 million.

- SRI was acquired by CDC in 1973 for approximately 43,000 shares. SRI provides facilities management, consulting and data processing system development for the health care, insurance and public utilities industries.
- Its main concentration is in the Blue Cross/Blue Shield health insurance programs and the company has a system supporting these programs for sale.

December/1976

P-6 .33

INPUT

FINANCIAL PICTURE

## Revenues (In Thousands)

	1970	1971	1972	1973	1974	1975	1976 (E)
Computer Business	\$551,523	\$585,961	\$683,796	\$948,191	\$1,101,142	\$1,246,369	\$1,350,000
Finance Business	394,057	344,310	343,044	398,638	478,767	457,659	510,000
Insurance Business	121,241	130,237	149,357	164,744	191,518	217,409	250,000

## Earnings (Loss) Before Income Taxes

	1970	1971	1972	1973	1974	1975	1976 (E)
Computer Business	\$(72,002)	\$(33,610)	\$9,991	\$32,727	\$(66,819)	\$31,556	12,500
Finance Business	53,634	79,935	78,950	63,494	53,701	71,285	38,000
Insurance Business	14,887	17,612	21,868	14,963	7,708	(20,943)	36,700

(E) - INPUT Estimate

FINANCIAL PICTURE ('cont)

## % of Total Computer Business Revenues

	1970	1971	1972	1973	1974	1975	1976(E)
Sales	65%	61%	58%	53%	50%	48%	48%
Equipment Rentals	14%	15%	16%	14%	14%	15%	14%
Services	21%	24%	26%	33%	36%	37%	38%

The following table shows the percentage of Computer Business revenues derived from the marketing of services and products for ultimate use by U.S. Government departments and agencies and from the marketing of services and products outside of the United States.

## % of Total Computer Business Revenues

	1970	1971	1972	1973	1974	1975	1976(E)
U.S. Government	33%	28%	20%	19%	19%	21%	22%
International Customers	29%	35%	40%	35%	31%	33%	32%

(E) - INPUT Estimate



## COMPANY PROFILE

---

### **CONTROL DATA CREDIT UNION SERVICES**

700 W. Hamilton Avenue  
Campbell, CA 95050  
(408) 866-3400

John C. Cianfrani, Vice President and  
General Manager  
Business Unit of Control Data Corporation  
Total Employees: 110\*  
Total Revenue, Fiscal Year End  
12/31/88: \$17,000,000\*

\*INPUT estimate

---

#### **The Company**

Control Data Credit Union Services (CUS) markets and supports its FOCUS<sup>R</sup> family of processing services and turnkey systems to over 600 credit unions in the U.S.

- CUS initially offered FOCUS as a batch and on-line processing service.
- In 1981, CUS introduced FOCUS DDP, a distributed processing service.
- In 1980, CUS introduced FOCUS ONE<sup>R</sup>, an IBM Series/1-based deposit and loan accounting turnkey system. Over 250 credit unions have purchased FOCUS ONE.
- During 1987, CUS announced FOCUS XP<sup>TM</sup>, the successor to FOCUS ONE. CUS has sold more than 160 FOCUS XP systems to credit unions nationwide.

CUS operates as a business unit of Control Data Corporation (CDC) within CDC's Information Services Group, Data Services unit.

#### **Key Products and Services**

CUS' 1988 revenue was derived from turnkey systems and associated support services and from batch and remote processing services.

- Since 1982, the number of processing clients has declined, while the number of credit unions purchasing turnkey systems has increased.

The FOCUS XP (extended processing) system is CUS' newest IBM Series/1-based turnkey information management and processing system for credit unions.

- FOCUS XP, the successor to FOCUS ONE, features nonstop processing; option-driven software; a central information file; a real estate loan function that accommodates home equity and variable-rate loans, as well as first-mortgage lending; custom report generation; on-line audit subsystems; security; and electronic mail.
- The FOCUS XP system services larger credit unions (10,000 to 200,000 members), providing a custom configuration of hardware and software.
  - Standard features include:
    - Integrated share and loan accounts
    - Multiple-share draft accounts with automatic fee and overdraft options
    - Customized and integrated on-line general ledger
    - Complete IRA processing and reporting
    - Full branch accounting
    - ATM services
    - Certificates and money market accounts
    - Check register/reconciliation
    - Club account support with automatic check preparation
    - Variable rate/payment loans
    - Loan preparation
    - Loan collection
    - Automatic insurance premium calculating and posting
    - ACH direct-deposit support
    - Advanced teller security
    - Account look-up, with multiple access methods
    - On-line training mode
    - Custom report writer with arithmetic function
    - Personal computer processor
    - QwikWriter
    - QwikMail/QwikFile
  - Optional software features include the following:
    - On-line ATM services--proprietary, network, or both
    - Audio response
    - Automated bill payment
    - Credit/debit card support
    - Microcomputer-based financial management for asset/liability, accrual/amortization, or key ratio/spreadsheet analysis
    - Optical character reader

- The FOCUS XP system price starts at \$200,000.
- Eastman Credit Union, which serves 25,000 employees of the chemicals division of Eastman Kodak, recently purchased a FOCUS XP system.

CUS currently offers batch and on-line FOCUS processing services to approximately 400 credit unions. Applications supported include the following:

- Share draft and loan draft processing
- Automated share and loan postings
- Certificate processing
- General ledger and financial reporting services
- Check preparation
- Delinquency notices and management reports
- EFT funds deposit
- VISA credit card support

CUS continues to support FOCUS DDP, its distributed data processing system. FOCUS DDP allows credit unions to input and store data at their sites using a Data General MP 100 system before accessing the CDC system through a data communications link to CUS' Campbell facility.

The Control Data Disaster Recovery Service (DRS) is designed to support FOCUS ONE and FOCUS XP credit union clients in the event of a disaster.

- DRS provides clients with batch and on-line remote availability to FOCUS ONE or FOCUS XP (excluding Audio Response and on-line ATMs) and assistance in acquiring, shipping, and installing any necessary replacement equipment.
- The IBM Series/1 Operations Center in the Campbell facility is the primary Disaster Recovery Backup Center.

Other support services provided by CUS include the following:

- Site planning
- Full installation and conversion
- Staff training
- Hardware and software documentation
- Remote diagnostics and service
- 24-hour telephone hotline support
- Consolidated hardware maintenance support
- Ongoing product enhancements
- Continuing education and updated documentation

- Video training
- Customer newsletters
- Regional user groups
- Customer advisory group
- Product review committee
- National customer conference

**Industry Markets**

One hundred percent of CUS' revenue is derived from credit unions.

**Geographic Markets**

One hundred percent of CUS' revenue is derived from the U.S.

In addition to its headquarters in Campbell (CA), CUS has sales and marketing personnel located in CDC offices across the U.S.

**Computer Hardware**

CUS has two IBM 3033s installed in Campbell in support of its on-line processing services.

CUS also has FOCUS ONE and FOCUS XP systems installed for its disaster recovery services and customer support.

## COMPANY PROFILE

---

### **CONTROL DATA EFT DATA SERVICES**

142 West 57th Street  
10th Floor  
New York, NY 10019-9998  
(212) 887-1100

Sheldon Forman, Manager  
Division of Control Data Corporation  
Total Employees: 75\*  
Total Revenue, Fiscal Year End  
12/31/88: \$7,000,000\*

\*INPUT estimate

---

### **The Company**

Control Data EFT Data Services, established in 1976, provides third-party electronic payment authorization and draft capture services through its TeleMoney™ product line to banks, retailers, and direct marketing companies.

EFT Data Services operates as a business unit of Control Data Corporation (CDC) within CDC's Information Services Group, Data Services.

INPUT estimates EFT Data Services 1988 revenue was approximately \$7 million. EFT Data Services' management has stated that TeleMoney sales in the first half of 1989 are 25% higher than last year.

### **Key Products and Services**

One hundred percent of EFT Data Services' revenue is derived from its electronic payment authorization and data capture network services.

TeleMoney is EFT Data Services' electronic payment authorization and draft capture service. Currently, TeleMoney processes more than 8 million transactions a month for its clients.

- Banks purchase TeleMoney to remarket authorization services to retailers doing business with them. Large retail chains and direct marketing companies, as well as mail-order houses, use TeleMoney to authorize millions of transactions each month.
- Access to the TeleMoney service is available via a retailer's own point-of-sale terminal, or through electronic cash registers (ECRs), telephones, computer links, or microcomputers.

- TeleMoney links directly to all major authorization data bases, and provides authorization and draft capture services for every major credit and debit card, and most private label cards. Transaction information is updated online.
- Through a draft capture service option, TeleMoney enables banks to deposit funds electronically, the same day that credit card purchases occur.
- A microfiche statement of all transactions is prepared each day, providing a self-audit trail which may be used in processing chargebacks.
- Authorizations using TeleMoney may be made on a real-time basis or in a batch mode, where multiple authorization requests are sent over national WATS lines.
  - Batch authorizations are generally used by direct marketers, mail order houses, TV marketing companies, and in other instances where the cardholder does not have to be present.
- TeleMoney can be accessed through:
  - An ECR controller line, which uses in-store controllers or minicomputers
  - Polled terminals, including standalone ECRs, CRTs with cash drawers, and in-store controllers
  - Audio response via a touch-tone telephone
  - Dial Port Service, an exclusive communications dial-up network that may be custom configured to each user
  - Direct Link, an on-line system that speeds processing time for high-volume users who need real-time authorization. Access is via a host computer, ECR controller, standalone computer, or similar device
  - Draft Capture, a host-based, fully-audited independent system for most major credit and private label cards
- TeleMoney is a leading authorization provider in several industries, including theme parks, mail order firms, telecommunications companies, and retail businesses. New clients include Abbott Bank Card Division (Omaha, NE), Bank of Boulder (Boulder, CO), Independent Credit Card Association (Palm Springs, CA), M&I Data Services, Inc. (Milwaukee, WI), Payless Cashways, Inc. (Kansas City, MO), Gateway National Bank (Phoenix, AZ), Seaworld (Orlando, FL), and Sports Authority (Ft. Lauderdale, FL).

In April 1989, EFT Data Services introduced TeleMoney Local Dial Access, a payment authorization service for local businesses that extends the benefits of Telemoney by providing check and credit card approvals at reduced cost.

- Local Dial Access is marketed to banks who, in turn, market the service to local merchants.
- The merchant dials a local phone number to connect his or her point-of-sale terminal or electronic cash register to CDC's nationwide computer network. Customer card number and transaction information is routed automatically to the appropriate authorization center. Approval information is transmitted back to the originating merchant--typically in 18 to 22 seconds.
- Reportedly, the average per-transaction fee is less than half the cost retailers pay for some other services.
- Local Dial Access is currently available in more than 340 major U.S. cities.

In November 1988, EFT Data Services introduced HyperPort Service, an authorization service that gives high-volume users quicker response times, protects the integrity of data, and facilitates network diagnostics and repair.

**Industry Markets**

An estimated 80% of EFT Data Services revenue is derived from banks, 10% from retailers, and 10% from direct marketing companies.

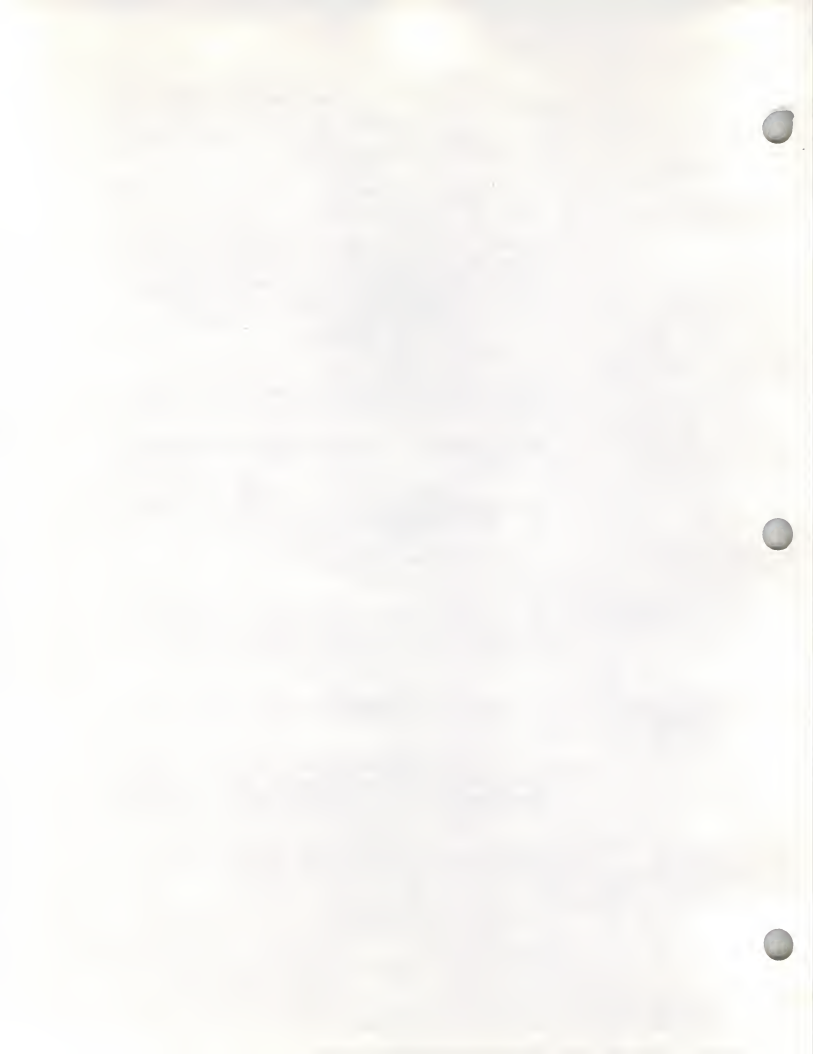
**Geographic Markets**

One hundred percent of EFT Data Services' revenue is derived from the U.S.

In addition to its headquarters in New York City, EFT Data Services has sales and support facilities in Dallas, Los Angeles, San Francisco, San Diego, Minneapolis, Hartford, and Cleveland.

**Computer Hardware**

EFT Data Services' data center in Cleveland has one IBM 9370 Model 60, four IBM 3083 Js, and one Amdahl 5880.



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

May 1996

## Coopers & Lybrand Consulting

**Vice Chairman:** John M. Jacobs  
**1251 Avenue of the Americas**  
**New York, NY 10020**  
**Phone:** (212) 536-2000  
**Fax:** (212) 536-3500  
**Internet:** <http://www.colybrand.com>

COOPERS & LYBRAND  
CONSULTING

---

Status:	Business Unit
Parent:	Coopers & Lybrand L.L.P.
CLC Worldwide Employees:	9,000
CLC Worldwide Revenue:	\$1,100,000,000
Fiscal Year End:	9/30/95

---

banking, and brokerage), government, high technology, higher education, information and telecommunications, health care, pharmaceutical, retail, and utilities industries.

### Key Points

- Coopers & Lybrand Consulting is the consulting arm of Coopers & Lybrand L.L.P., one of the world's leading international accounting and consulting firms.
- In 1994, Coopers & Lybrand renamed its Management Consulting practice "Coopers & Lybrand Consulting."
- The initial industry focus for Coopers & Lybrand Consulting is the automotive, construction and engineering, consumer and industrial, financial services (insurance,

### Company Description

Coopers & Lybrand Consulting is one of Coopers & Lybrand's five primary lines of business, providing the majority of the company's consulting services. Coopers & Lybrand Consulting services are provided along industry and functional lines, and include business strategy consulting, as well as information technology services. Information services provided include consulting, software development, professional services, and systems integration.

The parent company, Coopers & Lybrand L.L.P., is an international professional services firm that provides accounting, auditing, tax, and management consulting, and actuarial, employee benefits and compensation services to business, industry, and government.

- Coopers & Lybrand's organizational structure is shown in Exhibit A.
- Coopers & Lybrand's fiscal 1995 worldwide revenue reached approximately \$6.29 billion, compared to revenue of approximately \$5.54 billion in 1994. In fiscal 1995, approximately \$1.9 billion (30%) of Coopers & Lybrand's worldwide revenue was derived from the U.S., and the remaining \$4.4 billion (70%) from international sources.
- Coopers & Lybrand's revenue, by line of business is as follows:
  - Business Assurance contributed \$3.1 billion to Coopers & Lybrand's worldwide revenue for fiscal 1995, 27% (\$851 million) of which was derived from the U.S.
  - Financial Advisory Services (FAS) provided \$134 million in fiscal 1995 revenue, derived solely from the U.S.
  - Coopers & Lybrand Consulting provided approximately 17% of Coopers & Lybrand's worldwide revenue, and 19% of U.S. revenue in fiscal 1995.
  - Tax provided \$1.1 billion in worldwide revenue for fiscal 1995, 35% (\$388 million) of which was derived from the U.S.
  - Human Resource Advisory contributed \$193 million to Coopers & Lybrand's worldwide revenue for fiscal 1995, 78%

(\$150 million) of which was derived from the U.S.

- As of August 31, 1995, Coopers & Lybrand had 16,535 employees located in 100 U.S. cities. Worldwide, the company had 71,155 employees in 125 countries.

### Organization and Structure

Coopers & Lybrand Consulting is organized into eleven industry and five functional strategic business units, as shown in Exhibit B.

- Each of the units has a partner-in-charge who reports directly to John Jacobs, Vice Chairman of Coopers & Lybrand Consulting.
- The industry units provide strategic consulting services in the specified industry sectors, with support from the five functional business units.

### Company Strategy

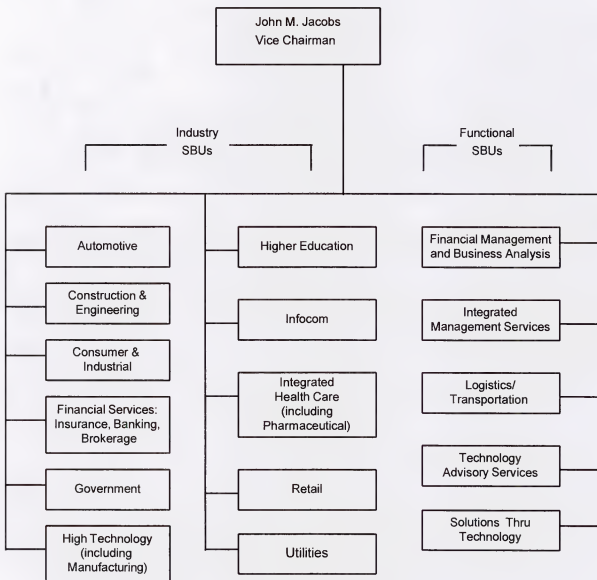
Coopers & Lybrand Consulting's strategy is built around a set of vertically integrated practices, which combine its best strategy, operations, and technology applications consultants. This industry-based strategy allows the company to place its best consulting teams on each assignment and move quickly from strategy to implementation.

Coopers & Lybrand Consulting's vision statement is "Business strategy with technology delivery capability." The company feels that combining its business strategy offerings with its IT delivery services uniquely positions the company's emphasis on world class business strategists, differentiating it from its competitors and providing a strong competitive advantage.

## Exhibit A Coopers & Lybrand Lines of Business

Business Assurance	Financial Advisory Services	Coopers & Lybrand Consulting	Tax	Human Resource Advisory
<ul style="list-style-type: none"> <li>• Financial audit</li> <li>• Assurance on financial information</li> <li>• Internal controls</li> <li>• Compliance</li> <li>• Assurance on operating and performance information</li> <li>• Computer audit</li> </ul>	<ul style="list-style-type: none"> <li>• Litigation and claims</li> <li>• Reorganizations</li> <li>• Mergers and acquisitions</li> <li>• Capital sourcing</li> <li>• Valuation</li> <li>• Real estate</li> </ul>	<ul style="list-style-type: none"> <li>• Industry consulting services</li> <li>• Strategy and organizational effectiveness</li> <li>• Technology advisory services</li> <li>• Financial management and business analysis</li> <li>• Technology delivery services</li> </ul>	<ul style="list-style-type: none"> <li>• Corporate, partnership, and individual tax planning</li> <li>• International and multi-state tax services</li> <li>• Wealth preservation and personal financial planning services</li> <li>• Tax policy and economic analysis</li> <li>• Tax technology</li> </ul>	<ul style="list-style-type: none"> <li>• Retirement and health benefits</li> <li>• Actuarial benefits and compensation</li> <li>• Organizational effectiveness and development</li> <li>• Compensation and employee communications</li> <li>• HR technologies</li> <li>• Risk management and claims consulting</li> </ul>

## Exhibit B Coopers & Lybrand Consulting Organizational Structure



## Financials

Coopers & Lybrand Consulting's worldwide revenue was approximately \$1.1 billion in fiscal 1995, compared to \$700 million in fiscal 1994.

In fiscal 1995, approximately 34% (\$369 million) of Coopers & Lybrand Consulting's revenue was derived from the U.S.

For the six-month period ended March 31, 1996, Coopers & Lybrand Consulting's U.S. revenue reached \$212.0 million. The company is projecting approximately \$440 million in U.S. revenue for fiscal 1996.

## Market Financials

Primary vertical markets that Coopers & Lybrand Consulting serves include the automotive, construction and engineering, consumer and industrial, financial services (insurance, banking, brokerage), government, high technology, higher education, information and telecommunications, health care, pharmaceutical, retail, and utilities industries.

## Employees

As of August 1, 1995, Coopers & Lybrand Consulting had approximately 9,000 employees worldwide. Of these, 2,836 were employed in the U.S., segmented as follows:

Partners .....	126
Professionals .....	2,290
Administration .....	<u>420</u>
	2,836

Coopers & Lybrand Consulting Professionals include associates, senior associates, and managing associates. Included in the administrative staff numbers are dedicated sales (business development) and in-house recruitment personnel.

## Key Products and Services

Coopers & Lybrand Consulting provides business and IT strategic planning assistance to reengineer processes, develop technology plans, and restructure and redesign organizations.

Coopers & Lybrand Consulting also provides a range of systems integration and professional services. By focusing on selected vertical industries, the firm can compete in its areas of greatest strength. Capabilities include:

- A full systems design, development, and implementation capability using a variety of tools and advanced project management techniques ("best practices")
- A range of technical and business advisory industry skills developed through Coopers & Lybrand Consulting's long experience as an auditing and management consulting firm
- IT planning and implementation expertise in network base solutions—client/server and other distributed processing technologies
- Systems architecture and database expertise to modernize systems and relational database applications—legacy systems as well as "new world" solutions
- Strong expertise in advanced technologies and applications, especially in decision support and data warehousing systems

Coopers & Lybrand Consulting also provides business process reengineering (BPR) services. The company views BPR as a means of achieving radical improvement in performance and business competitiveness by streamlining core business processes. The firm believes it is essential to be selective—choose only one or two processes that will give the greatest return as perceived by the customer—otherwise, the changes may be too

great for an organization to absorb. However, Coopers & Lybrand Consulting also stresses that BPR is not merely gaining better performance from an organization's information systems.

- Coopers & Lybrand Consulting's prime offering is BreakPoint BPR, which has four main components:
  - Core process definition
  - BreakPoint identification
  - Process redesign
  - Change management
- Other related services that may lead to the use of BPR services include total quality management and activity- and time-based management.
- Coopers & Lybrand Consulting's BPR projects typically involve redesigning the client's product supply chain to deliver improved customer service, reduce lead times, provide greater flexibility, and reduce process costs. BPR projects typically lead to a need to redesign and re-implement the information systems support for those processes affected.
- Coopers & Lybrand Consulting typically does not have—or seek—strategic alliances with other vendors related to providing BPR services. The retention of independence is seen by the firm as a key factor in its services.
- Coopers & Lybrand Consulting's proprietary analytic tools and techniques that support BPR services include the following:
  - Benchmarking, to focus reengineering efforts on areas of greatest opportunity and to set goals for improvement

- Process mapping, to document and examine workflows
- SPARKS process simulator, a workflow reengineering and process modeling tool
- SUMMIT methodologies, to assure that information technology supports the business strategy and that systems are integrated to support redesigned core processes
- Just-in-time principles, applied to shrink backlog by improving workflow, revamping work space layout, and reducing overhead costs
- Supply chain management, an approach to decrease inventory and production costs and improve the speed and quality of product distribution
- Cycle time reduction, to improve balance sheet performance by shrinking lead time to maximize return on assets
- Speed to market, to improve research and development and other processes
- Activity-based management, to improve value-added activities and eliminate activities that do not add value to the product or service
- Route mapping, to manage a variety of IT-oriented reengineering projects by using different components from the firm's IT methodologies
- Change management, to define the skills and infrastructure necessary to assure a successful transition to the reengineered organization

Coopers & Lybrand Consulting is organized around a set of eleven vertically integrated industry business units and five functional business units.

### **Industry Business Units**

The following summarizes Coopers & Lybrand Consulting's industry business units:

*Automotive*—Senior-level consultants provide services to the automotive sector.

- Services include high-level strategic consulting, business process reengineering (BPR), total cost management, and supply chain management.
- Change management performance measures and implementation services include interactive communications, operational support, and analysis.

*Construction and Engineering*—Coopers & Lybrand Consulting's construction professionals offer services for project owners:

- Management consulting during commercial and industrial design/construction initiatives
- Services to help construction and design firms improve their internal operations and competitiveness
- Management and scheduling expertise to facilitate new product development projects

*Consumer and Industrial*—Support services are offered for the manufacturing and service industries, including consumer products, industrial equipment, general manufacturing, chemical, and other process sectors:

- Consultants provide supply chain management, BPR, and manufacturing strategy development services.
- Additional services include developing sales and marketing approaches, materials

management, activity-based costing (ABC), organizational restructuring, JIT approaches, change management, total quality management (TQM), and efficient consumer response.

*Financial Services*—Services are provided for the banking, capital markets, insurance, and investment sectors.

- Consultants provide strategic advice and implement concepts such as financial management, performance improvement, and information management.
- The Insurance practice emphasizes value-based planning and productivity improvements.
- The Retail Banking group provides retail distribution services.
- Consultants also provide financial risk management support for the Financial Services sector.

*Government*—Services are offered to federal, state, and local government organizations, as well as to a variety of Fortune 500 companies.

- Consultants offer services in areas such as financial controls, process reengineering, and change management.

*Higher Education*—Consulting services are provided to universities and academic medical centers.

- Consultants increase administrative efficiency, improve faculty productivity, and define ways to extract value from the virtual value chain.

*High Technology*—Support is provided for the electronic hardware, software, chip-making, and aerospace sectors.

- Additionally, the Center for Operations Technology (COT) applies Coopers & Lybrand Consulting's "best practices" methodologies and enabling tools to improve clients' profits.
- Coopers & Lybrand Consulting's proprietary Design for Excellence® and its integrated manufacturing systems methodologies are used to facilitate high-technology engagements.

*Information and Communications (Infocom)*—Consulting services are provided to the telecommunications and media sectors.

- Consultants facilitate business strategy development and implementation.
- Assistance is provided for strategic financial, regulatory, and market analysis, as well as process and technology improvements.

*Integrated Health Care*—Services are offered to all sectors of the health care and pharmaceutical markets.

- Consultants implement strategic plans, improve operations, and implement information systems.
- Coopers & Lybrand Consulting professionals improve clients' operational efficiency and help health care organizations prepare for the changing marketplace.
- Differentiating services are offered in disease management, managed care, BPR, sales and marketing, product development, and systems implementation.

*Retail*—Strategic consulting services are provided for retailers to help increase revenue and enhance profitability through a range of strategic consulting services.

- The Consumer Enhancement and Development approach enables retailers to maximize customer productivity.
- Consultants assist retailers in deploying technology to build customer knowledge and transform organizations through business process change.
- Coopers & Lybrand Consulting supports the creation of Great Performance Alliances between retailers and their vendors.

*Utilities*—Services provided to companies in the utilities sector include financial systems, activity-based management (ABM), operational improvements, and marketing strategies.

- Other services offered include regulatory/legislative, environmental compliance, restructuring and privatization, mergers and acquisitions, pricing strategies, risk management, and telecommunication strategies.

### **Functional Business Units**

Coopers & Lybrand Consulting's functional business units focus on resolving problems that cross all industry lines. The five functionally oriented practices of the organization are as follows:

*Financial Management and Business Analysis (FMBA)*—Comprised mainly of ex-CPAs and chief financial officers (CFOs) of Fortune 500 and 1000 companies, this group offers consulting services primarily to CFOs, helping to streamline processes and leverage information for competitive advantage. Services include defining strategies for the CFO's role, improving the CFO's function, developing meaningful reporting and measurement techniques, obtaining low-cost funds, managing risk, and building an efficient

infrastructure including financial systems design.

**Integrated Management Services (IMS)**—This group serves as the “center of excellence” for strategy, focusing on business process redesign. Consultants create and implement enterprise-wide approaches by analyzing market issues and major structural changes in the client’s industry, global markets, and products. Analyzing potential operational changes, the consultants recommend the best approach to increase the value of the client’s enterprise.

**Logistics/Transportation (SysteCon)**—This group was formed with the acquisition of SysteCon, a logistics and distribution planning company, in 1988. Consultants assist clients by applying best practice supply chain management methodologies to a client’s supplier network, manufacturing facilities, and distribution organization to maximize productivity. SysteCon’s TotaLogistic™ approach facilitates the integrated flow of materials from the source to the final customer. Services include logistics, systems implementation, customer service, manufacturing operations, supplier partnerships, distribution and operations improvements, materials management, and supplier partnerships.

**Technology Advisory Services (TAS)**—This group focuses on aligning IT strategy with business strategy. Consultants develop technology and implementation strategies for management, to optimize technology investments. Services include strategy development, strategic realization, and advanced technology deployment.

**Solutions Thru Technology (STT)**—STT, the systems and technology consulting unit of Coopers & Lybrand Consulting, provides approximately 50% of Coopers & Lybrand Consulting’s U.S. revenue. This group offers the full life cycle of systems implementation services, providing in-depth skills in different technology platforms, operating systems, applications, databases, communication systems, and languages.

STT services include:

- Project management/quality assurance
- Telecommunications and networking
- Client/server architecture
- Emerging technologies
  - Infrastructure development
  - Technology architecture planning
  - Automated testing of distributed systems
  - Network architecture planning
  - Object-oriented technologies
  - Internet, intranet technologies
- Data warehousing/decision support systems
- Applications software evaluation and selection
- Year 2000 challenges
- Staff enhancement
- Midrange technologies practice
  - Application development
  - Systems and package selection, installation, and tuning
  - Software package evaluation and implementation
  - Midrange server technologies
  - Network support

- Mainframe technologies practice

- Application development
- Application maintenance and outsourcing
- Database selection, implementation, and design (all platforms)
- Database conversions
- Data center and application Help Desk support
- Software package evaluation and implementation

- SUMMIT

- The SUMMIT-D® (proprietary) systems development methodology provides in-depth project management and system delivery guidance. SUMMIT-D provides “best practices” repeatable processes and approaches necessary to control complex projects and mitigate risk.
- The SUMMIT-M<sup>SM</sup> maintenance methodology controls software modification, enhancement, and maintenance of production systems.
- The SUMMIT PM® software product provides automated project control, presenting the contents of SUMMIT-D using a GUI.

- Package selection and implementation services

- Dun & Bradstreet Software design and implementation services
- SAP software design and implementation services
- PeopleSoft software design and implementation services
- Oracle software services

- Independent software vendor selection methodology

- Industry consulting and planning

- Financial services
- Utilities—systems and technology solutions
- Pharmaceutical—technology solutions

- Systems Integration—Coopers & Lybrand Consulting delivers the full life cycle of systems integration services through the STT business unit. Offerings include:

- Business, management, and IT consulting by teaming with the business strategy vertical groups
- Systems design, development, and implementation
- Selection, evaluation, and acquisition of hardware, software, and telecommunications equipment
- Network management and operations

- Software maintenance of “in-production” systems

- Outsourcing—STT offers application maintenance services in four key areas:

- Maintenance outsourcing—Maintenance of legacy software, applications, and databases
- Facilities management—Handling of hardware, networks, database administration, building, and staffing
- Information service assessments—Analysis of the IT organization and software assets

- Best practices—Identification of the best techniques by which to maintain legacy systems, raise staff productivity, and reduce costs

## Sample Engagements

Recent engagement examples include:

- For a major midwestern electric utility company, Coopers & Lybrand Consulting designed, developed, and implemented an activity based management system (ABMS), providing planning, budgeting, and performance capabilities. The new system was implemented in a client/server environment with local- and wide-area networks.
- For a national telecommunications service provider, Coopers & Lybrand Consulting developed a client/server sales order system, facilitating the company's BPR efforts. Application maintenance and development support of mission-critical financial systems was also provided during the new application implementation.
- For a pharmaceutical distribution company, Coopers & Lybrand Consulting developed an IS prototype using Rapid Application Development (RAD) techniques, contributing to the development of a client/server-based data reporting and access facility, and a decision support system.
- For a national long-distance telecommunication service provider, Coopers & Lybrand Consulting undertook an engagement to define the company's enterprise data requirements. The project involved developing a data management strategy, establishing a data administration function, and documenting requirements defined in the strategy and data administration procedures.
- For a major utility company, Coopers & Lybrand Consulting assisted in the migration from an IBM 3090 mainframe, COBOL/VSAM, and DB2 environment to a true client/server environment. The company implemented an integrated planning, budgeting, performance reporting, and evaluation system.
- For a Wall Street brokerage firm, Coopers & Lybrand Consulting assisted in realigning the technical architecture of the firm's system, and planned and implemented new infrastructure to support client/server and distributed technologies.
- For a pharmaceutical company, Coopers & Lybrand Consulting replaced the current pricing and contract systems and business processes using client/server technology for the systems foundation. The new system delivers membership profiling capability and sales-based contract administration.
- For a national financial services and insurance company, Coopers & Lybrand Consulting planned the implementation, integration, testing, and production support of a new distributed system in a client/server environment.
- For a major Wall street brokerage firm, Coopers & Lybrand Consulting provided project management and testing/QA leadership. The company developed automated test scripts and created client/server, mainframe gateway, applications inventory, and developers' guidelines.
- For a major U.S. warehouse and distribution company, Coopers & Lybrand Consulting replaced the client's IBM System/36 hardware and internally developed RPGII applications with a best of breed warehouse management system and client/server

financial software including integrated HR and payroll models. The solution includes handheld RF terminals, document imaging and management, EDI, and interfaces to labor tracking equipment. The company also developed a detailed implementation and roll-out plan that included extensive retraining of warehouse and corporate MIS personnel.

### Business Development

Coopers & Lybrand Consulting's business strategy includes a dedicated sales force within Coopers & Lybrand Consulting that consists of 75 sales personnel spending 100% of their time on sales activities, 126 partners who commit 50% of their time to business development, and the remaining 50% on consulting activities, and approximately 600 managing associates who devote about 60% of their time to client services, and the remaining time to solution design and proposal activities.

### Alliances

Coopers & Lybrand Consulting uses strategic alliances to strengthen its systems integration practice areas. The alliances are chosen to increase the scope of the firm's system integration offerings and improve its competitive position in the marketplace.

Coopers & Lybrand Consulting maintains vendor relationships with the following technology companies, among others:

Allied  
Alternative Resource  
Asymetrics  
Bay Networks  
CIS Technologies  
CMSI  
Comdisco  
Comerica  
Commercial Ware

Computron  
Data General  
Data Logic  
DCI  
Digital Equipment  
Dun & Bradstreet  
Edison  
Excalibur Software  
Excelenet  
First Consulting  
Foliage Software  
FTP  
GC Computer Services  
Genesys Software  
Harvard Design & Mapping  
Hewlett-Packard  
IBM  
Informix  
J.D. Edwards  
Lawson Software  
Lotus Development  
Microsoft  
Mitem  
Novell  
Oracle  
PeopleSoft  
Phamix  
PKS Software  
Reynolds & Reynolds  
SAP  
Segue Corp.  
Softbridge, Inc.  
Software 2000  
Spectrum  
SPO America  
System Software Associates  
Sun Microsystems  
Sybase  
Taubman  
Thornapple  
Transnational Computing  
Varsity Logistics  
Viasoft  
Wang  
Wismer Martin

## Competition

Coopers & Lybrand Consulting considers the following companies its key competitors: Andersen Consulting and Cambridge Technology Partners in the area of technology, and McKinsey & Company in business strategy.

## INPUT Assessment

Coopers & Lybrand Consulting considers its strengths to include:

- Providing world class business strategists *with* enabling technology and delivery along industry lines
- A culture that rewards long-term client “partnerships”
- Maintaining shared “Centers of Excellence” to reduce costs
- Offering a full range of professional services, including business strategy, finance, and accounting, as well as technology consulting
- Strong audit-client relationships
- Taking a business and total return on investment view of all technology-enabling investment options
- Alliances with major information technology vendors, including IBM, Hewlett-Packard, Oracle, PeopleSoft, Sun Microsystems, Sybase, Digital, Microsoft, and Lotus
- An experienced, well-qualified staff with over ten years business experience on average
- Following an aggressive business development sales model

Some of the challenges faced by the firm include the following:

- Finding, recruiting, and retaining staff of the highest quality to take the company strategy forward
- Further leveraging of the audit account base for consulting opportunities
- Staying focused on the company’s message—“Business strategy with technology delivery capability.”
- Maintaining a “client-centric” focus
- Infrastructure investment alternatives selection to maintain leadership in the thought and knowledge business
- Expanding business development and technology infrastructure to support rapid sustained growth

## Parent Company

Coopers & Lybrand L.L.P.  
1251 Avenue of the Americas  
New York, NY 10020  
Phone: (212) 536-2000  
Revenue: \$6,294,000,000 (9/30/95)



## COMPANY PROFILE

---

### COOPERS & LYBRAND

1251 Avenue of the Americas  
New York, NY 10020

Phone: (212) 536-2000

Fax: (212) 536-3500

Vice Chairman, Performance

Improvement: John Jacobs

Status: Partnership

Information Services Employees: 7,500

Total Revenue: \$5.22 billion

Worldwide Information

Services Revenue: \$720 million

Fiscal Year End: 12/31/93

---

### Key Points

- Coopers & Lybrand (C&L) is one of the world's leading international accounting and consulting firms. Information services provided by C&L include professional services and systems integration.
- As a result of its own business process re-engineering, C&L has established five core lines of business and has renamed its Management Consulting practice "Performance Improvement." This unit is headed by John Jacobs.
- C&L's initial industry focus for its Performance Improvement practice is the manufacturing, financial services, information and telecommunications, health care and retail industries.
- C&L has allied with network systems integrator NMI to assist businesses moving into client/server LAN environments, including conversions of their databases, applications and business process flows.
- In late 1992, George DiNardo was appointed to head the information systems portion of C&L's financial services consulting practice. DiNardo was formerly chief information officer at Mellon Bank Corp.

**Company  
Description**

C&L is an international public accounting and management consulting firm that provides accounting, auditing, tax and management consulting, and actuarial, employee benefits and compensation services to business, industry, and government. C&L operates through a network of more than 100 offices in the U.S. in 117 countries around the world.

Information services provided by C&L include consulting, business process re-engineering and software, development, professional services and systems integration.

**Strategy**

Since fiscal 1992, C&L has undertaken a significant strategic planning process to insure the firm will continue to serve its clients and target markets and keep attuned to changing global, technological changes as well as service delivery needs.

C&L states the following as its new vision:

*"(C&L) is a professional services firm with five core businesses in which it intends to achieve and maintain distinctive market position: assurance; tax; performance improvement; human resource consulting; and process management services."*

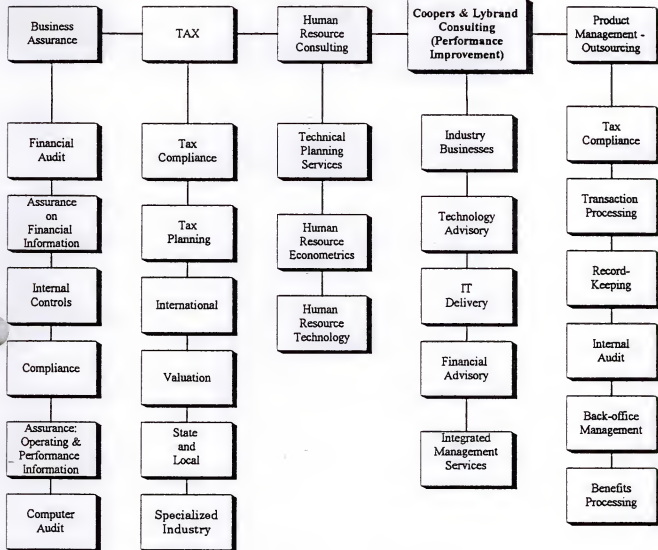
C&L has also established six core competencies; re-engineering, learning, relationship management, technology (IT), international and human resources/personnel development--each with its own vice chairman. Ellen Knapp, the Vice Chairman for Technolog, is focused on internal applications of IT at C&L.

**Organization/  
Structure**

A summary of C&L's core businesses is presented in Exhibit A on the following page.

The company intends to win every market it serves by being the best in: client relationship management, the use of technology to deliver more timely and relevant services, and the understanding of markets and industries in which its clients operate. C&L stresses industry expertise and specialization in its goal of forming strategic partnerships with its clients.

Information services business, formerly part of C&L's former Management Consulting unit, is now included in the Performance Improvement business.

EXHIBIT A:  
COOPERS & LYBRAND  
LINES OF BUSINESS

**Financials**

C&L's total worldwide revenue for 1993 is estimated at \$5.22 billion. U.S. revenues account for \$1.64 billion.

INPUT estimates C&L's 1993 worldwide information services revenues were \$700 million, up from an estimated \$680 million for 1992. U.S. information services revenue for 1993 is estimated at \$480 million, compared to \$450 million in 1992.

**Market Financials**

INPUT estimates C&L's \$480 million in U.S. information services revenue for 1992 was derived as follows:

Professional services	54%
Consulting (12%)	
Software development (33%)	
Training & education (9%)	
Systems integration	43%
Software products	<u>3%</u>
	100

**Geographic Markets**

INPUT estimates approximately 68% (\$480 million) of C&L's \$700 million in 1993 information services revenue was derived from the U.S.

**Employees**

C&L has approximately 30,000 worldwide employees worldwide, with approximately 2,000 are in the Performance Improvement business unit.

Within the Performance Improvement business unit, C&L has approximately 700 consultants associated with information technology-related activities, including consultants involved in business process re-engineering.

**Alliances**

Since early 1992, NMI and C&L have joined forces to help public- and private-sector clients solve their networking and systems integration needs.

- The alliance provides applications development, implementation of new technology platforms and rightsizing of organizations and platforms.

- The initial focus is on industries where C&L and NMI have a presence--the financial services, government and legal sectors. Future target markets include health care and small manufacturers.

Other alliances/agreements:

- J.D. Edwards, accounting software products
- NMI, network management software
- Software 2000, AS/400 inventory, warehouse, financial applications products
- Borland, integration partner program
- IBM, business partner
- Hewlett-Packard
- DEC, business partner, EDI
- Oracle

C&L has an agreement with Applied Business Technology Corporation to remarket Applied Technology's Project Bridge as SUMMITBridge, an automated presentation and planning facility for C&L's proprietary development methodology.

*Manufacturing*

C&L has alliances/marketing agreements with various vendors related to the manufacturing industry:

- C&L is providing consulting services and joint marketing for SAP America's R/2 manufacturing system. C&L has established a SAP Support Group for customer training, implementation and project management of the R/2 system.
- Meritus, Inc., a joint venture with IBM, offers consulting services for computer-integrated manufacturing.

**Acquisitions**

C&L's last major acquisition in the information technology area was the 1989 acquisition of Computer Assistance, Inc. (CAI) of Hartford (CT). CAI, a professional services firm with over 500 employees and 1988 revenue of \$40 million, added significant programming and systems development talent to C&L's management consulting practice.

**Key Products and Services***Performance Improvement*

The C&L's Performance Improvement business combines C&L's former information technology, operations and financial analytics consulting businesses. Current operations include:

- Industry-focused consulting businesses in five industries-- manufacturing, financial services, information/telecommunications, health care and retail. Industry-oriented information technology is provided either as part of the industry businesses or part of C&L's functional expertise. Each business is a focused consulting business with a clear intent and strategy for its market.
- Financial advisory services offer depth of expertise in analytical skills and integration of different forms of analysis (such as shareholder value analysis and activity-based costing) with business process analysis for client financial management.
- Technology advisory services include advising clients on their strategic and practical use of technology for competitive purposes and helping clients to achieve business goals. Beyond pure information technology, this business includes C&L's Center for Operations and Technology which stresses the link between information technology and other technologies to increase value. This business focuses on strategy planning and design, not detailed implementation.
- Information technology delivery services combine C&L's information technology practices with Computer Assistance to create a unified, national technology delivery business focusing on project management and systems delivery.
- Integrated management services brings together C&L's strategic management, business process analysis, total quality management and organizational analysis capabilities.

*Systems Integration and Professional Services*

C&L provides a range of systems integration and professional services. By focusing on selected vertical industries, C&L can compete in its areas of greatest strength.

In addition, Coopers & Lybrand gains a competitive edge in the availability of highly marketable and specialized capabilities. Some of these capabilities are:

- A full systems design, development and implementation capability using CASE tools and advanced project management techniques
- A range of technical and advisory industry skills developed through C&L's long experience as an auditing and management consulting firm
- Expertise in connectivity solutions--client/server and other distributed processing technologies
- Systems architecture and database expertise to modernize systems and relational database applications
- Expertise in advanced technologies and applications, especially in image processing, multimedia, artificial intelligence and object-oriented programming and systems

*Business Process Re-engineering:*

C&L defines business process re-engineering (BPR) as a means of achieving radical improvement in performance and business competitiveness by identifying core business processes. C&L believes it is essential to be selective--to choose only one or two processes that will give the greatest return as perceived by the customer--otherwise the changes may be too great for an organization to absorb. However, C&L also stresses that BPR is not merely gaining better performance from an organization's information systems.

- C&L's prime offering is BreakPoint BPR with four main components:
  - Core process definition
  - BreakPoint identification
  - Process redesign
  - Change management

Other related services that may lead to the use of BPR services include: total quality management and activity- and time-based management.

C&Ls BPR projects typically involve the redesign of the client products supply chain to deliver improved customer service and reduce lead times, and provide greater flexibility and reduce process costs. BPR projects typically lead to a need to redesign and re-implement the information systems support for those processes affected.

C&L typically does not have, nor seeks, strategic alliances with other vendors related to providing BPR services. The retention of independence is seen by C&L as a key factor in its services.

C&L's proprietary analytic tools and techniques that support business process re-engineering services include the following:

- Benchmarking, to focus re-engineering efforts on areas of greatest opportunity and set goals for improvement
- Process mapping, to document and examine work flows
- Organization Analyst, to analyze the organizational arrangement of work activities, test structure changes and determine the impact of structure changes on cost and span of control
- Sparks, a workflow re-engineering and process modeling tool
- SUMMIT methodologies, to assure information technology supports business strategy and systems are integrated to support redesigned core processes
- JIT principles
- Supply chain management -
- Cycle time reduction
- Time to market
- Activity-based costing

#### *Systems Integration*

C&L views itself as a full-service systems integration vendor and offers a broad range of system integration services, including:

- Business and management consulting
- Systems design, development and implementation

- Selection, evaluation and acquisition of hardware, software and telecommunications equipment
- Network management and operations
- Software maintenance
- Education, training and documentation services

C&L also uses strategic alliances to strengthen its system integration practice areas. The alliances are chosen to increase the scope of C&L's system integration offerings and improve C&L's competitive position in the marketplace.

Current alliances in the systems integration area include: IBM, DEC, J.D. Edwards, Software 2000 and FILENET.

## Competitors

Major competitors include Andersen Consulting, Ernst & Young, KPMG Peat Marwick, Deloitte & Touche, Price Waterhouse and Electronic Data Systems.

## INPUT Assessment

Coopers & Lybrand believes one of the key driving forces in its market for information services is the increasing complexity of delivering products to sophisticated buyers.

For C&L clients, this means that customers are increasing their expectations of quality, flexibility and timeliness from their suppliers. Furthermore, the rapid pace of technology developments means C&L customers are re-evaluating their own customer's needs and are measuring themselves against industry benchmarks.

Re-engineering of the U.S. corporation and technology developments are driving the increase in Coopers & Lybrand's information services practices.

Some of C&L's strengths include:

- Alliances with major information technology vendors including IBM, HP and Oracle
- C&L's knowledge of manufacturing and financial services in relation to information technology planning
- Research on object-oriented database technologies

Some of C&L's challenges will be to:

- Develop a flexible internal organization to deliver information services within the existing partnership structure
- To develop more comprehensive internal expertise in communications and network management and operations
- Develop an overall client/server strategy and communicate that strategy clearly to clients and prospects

# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

September 1995

## Coopers & Lybrand L.L.P.

Vice Chairman,  
Coopers & Lybrand  
Consulting: John M. Jacobs  
1251 Avenue of the Americas  
New York, NY 10020  
Phone: (212) 536-2000  
Fax: (212) 536-3500

Status:	Partnership
Worldwide Consulting Employees:	9,000
Total Revenue:	\$5,538,000,000
Worldwide Information Services Revenue:	\$475,000,000
Fiscal Year End:	9/30/94

### Key Points

- Coopers & Lybrand L.L.P. (C&L) is one of the world's leading international accounting and consulting firms. Information technology services provided by C&L include professional services and systems integration.
- As a result of its own business process reengineering, C&L has established five core lines of business and has renamed its Management Consulting practice "Coopers

& Lybrand Consulting". This unit is headed by John Jacobs.

- The initial industry focus for Coopers & Lybrand Consulting is the commercial/industrial, financial services, information and telecommunications, healthcare, higher education, government and retail industries.

### Company Description

C&L is an international professional services firm that provides accounting, auditing, tax and management consulting and actuarial, employee benefits and compensation services to business, industry and government. Information services provided by C&L include consulting, software development and systems integration.

## Organization and Structure

C&L has five primary lines of business:

- Business Assurance
- Financial Advisory
- Coopers & Lybrand Consulting
- Tax
- Human Resource Advisory

A summary of C&L's core businesses is presented in Exhibit A on the following page.

Coopers & Lybrand Consulting is the management consulting arm of C&L. It provides consulting services along industry and functional areas.

C&L operates through a network of more than 100 offices in 125 countries worldwide.

## Company Strategy

Coopers & Lybrand states the following as its new vision:

*"C&L is a professional services firm with five core businesses in which it intends to achieve and maintain distinctive market position."*

C&L has also established four internal core competencies—international; infrastructure; learning and human resources; and technology. Ellen Knapp, the Vice Chairman for Technology, is focused on international applications information technology within C&L.

C&L stresses industry expertise and specialization in its goal of forming strategic partnerships with its clients.

The firm aims to win every market it serves by excelling in client relationship

management, the use of technology to deliver more timely and relevant services, and the understanding of markets and industries in which its clients operate.

## Financials

C&L's total worldwide revenue for 1994 was approximately \$5.538 billion, compared to approximately \$5.22 billion in 1993.

Worldwide consulting revenue was \$1.324 billion in 1994, compared to \$1.137 billion in 1993.

C&L's worldwide information services revenue was \$475 million in 1994.

## Market Financials

Primary vertical markets that C&L serves include commercial/industrial, financial services, information and telecommunications, healthcare, higher education, government and retail industries.

## Geographic Markets

INPUT estimates that approximately 30% of C&L's revenue was derived from the U.S. in 1994, as compared to 31% in 1993.

Approximately 45% (\$591 million) of C&L's consulting revenue was derived from the U.S. and the remaining 55% (\$733 million) from international sources.

Approximately 32% (\$150 million) of C&L's information services revenue was derived from the U.S. and the remaining 68% (\$325 million) from international sources.

## Employees

Coopers & Lybrand Consulting has 5,200 professionals outside the U.S. and 3,800 professionals in the U.S. Of these, 275 are partners.

**Exhibit A  
Coopers & Lybrand  
Lines of Business**

Business Assurance	Financial Advisory Services	Coopers & Lybrand Consulting	Tax	Human Resource Advisory
<ul style="list-style-type: none"> <li>• Financial audit</li> <li>• Financial and information assurance</li> <li>• Internal controls</li> <li>• Compliance</li> <li>• Operating and performance information assurance</li> <li>• Computer audit</li> </ul>	<ul style="list-style-type: none"> <li>• Litigation and claims</li> <li>• Reorganizations</li> <li>• Mergers and acquisitions</li> <li>• Capital sourcing</li> <li>• Valuation</li> <li>• Real estate</li> </ul>	INDUSTRY GROUPS	<ul style="list-style-type: none"> <li>• Corporate, partnership and individual tax planning</li> <li>• International and multisale services</li> <li>• Tax policy and economic analysis</li> <li>• Tax technology</li> </ul>	<ul style="list-style-type: none"> <li>• Retirement and health benefits</li> <li>• Actuarial benefits and compensation</li> <li>• Organizational effectiveness and development</li> <li>• HR technologies</li> </ul>
		FUNCTIONAL GROUPS		
		<ul style="list-style-type: none"> <li>• Financial Management and Business Analysis</li> <li>• Integrated Management Services</li> <li>• Technology Advisory Services</li> <li>• Solutions Thru Technology</li> <li>• Supply Chain Management/SysteCon</li> <li>• International</li> </ul>		

## Key Products and Services

The following discussion will focus on the information services provided by C&L through Coopers & Lybrand Consulting.

Coopers & Lybrand Consulting provides strategic planning assistance to re-engineer processes, develop technology plans and restructure and design organizations.

Services offered by C&L's six functionally-oriented practices include the following:

- Financial Management and Business Analysis (FMBA) is a national practice that offers performance measurement services and cost analysis.
- Integrated Management Services (IMS) brings together C&L's strategic management, business process analysis, total quality management and organizational analysis capabilities.
- Technology Advisory Services (TAS) is a national practice that provides consulting services that encompass three major service lines as follows:
  - Strategy
  - Tactical planning and engineering
  - Advanced technologies
- The High Technology practice is designed to improve operational processes such as:
  - Product development in manufacturing industries
  - Product development in service industries
  - Fabrication and assembly in manufacturing industries
  - Service delivery in service industries
- Solutions thru Technology is the technical consulting unit of Coopers & Lybrand Consulting that facilitates systems development and implementation through the following services:
  - Project management
  - Telecommunications and networking
  - Client/server architecture
  - Management and industry consulting and planning
  - Systems and package selection installation and tuning
  - CASE tools and midrange and mainframe technologies reengineering
  - Systems analysis and design
  - Programming and testing
  - Conversions
  - Applications maintenance and year 2000
  - Facilities management
  - Workflow management/ workgroup implementation
  - Imaging
  - SUMMIT (proprietary) lifecycle methodology
  - Technology architecture planning
  - Decision support systems
  - Data warehousing
  - Business systems
  - Staff enhancement
- The Supply Chain Management/SysteCon practice focuses on supply chain management and provides strategic and tactical consulting support in four areas:
  - TotalLogistics<sup>SM</sup> strategy
  - Manufacturing operations
  - Distribution operations
  - Logistics information systems

The following summarizes Coopers & Lybrand Consulting's industry group offerings:

The Retail group provides BPR, TQM, cost reduction, cycle time reduction, asset performance, process simulator, change management, research and development and crisis problem solving services to the following industry segments:

- Food and beverage
- Household products
- Health and beauty aids
- Textile and leather goods
- Office supplies

The Commercial/Industrial practice offers services that include:

- Manufacturing
- Strategy development
- BPR
- Cycle time reduction
- TQM
- SPARKS process simulator
- Asset Performance
- Change management
- Cost reduction

Services offered in the Financial Services area encompass:

- Information technology
- Resource management
- Financial risk management
- Financial management
- Strategy and business planning

The Government Consulting practice serves the public and private sector through the following three groups:

- The Performance Management Group offers productivity, organizational, strategic and human resource services.

- The Technology and Financial Group offers a range of information technology management services, from enterprise level planning to design and implementation.
- The International Management Consulting Services Group offers capital market development, enterprise development and trade and investment promotion services.

The Higher Education practice focuses on the restructuring of higher education through six areas of concentration:

- Operations and productivity
- Facilities
- Human resources
- Governance organization and planning
- Information technology
- Financial management and accounting

The Information/Communication practice covers the telecommunications industry and offers services in four areas:

- Business planning and strategy
- Operations improvement
- International
- Information technology

The Integrated Health Care Consulting Services (IHCCS) practice offers a range of services through four units:

- The Health Care Strategy, Planning and Operations unit focuses on areas of strategic positioning, business support processes, and plans and action programs for accomplishing cost effectiveness.
- The Health Care Information Technology unit offers services in areas of application information systems, strategies, architectures, decision support, vendor package selections and implementations, and large scale integrations.

- The Pharmaceuticals unit provides business solutions in areas of strategic positioning, operations improvement, information systems, product introduction, and compliance and control to the pharmaceutical, biotechnology, medical devices and diagnostics industries.
- The Integrated Clinical Management unit focuses on developing the clinical and medical aspects of the healthcare business.

The International Consulting practice offers a global perspective to fulfill the service demands of major multinational companies.

#### *Systems Integration and Professional Services*

Coopers & Lybrand Consulting provides a range of systems integration and professional services. By focusing on selected vertical industries, the firm can compete in its areas of greatest strength.

Coopers & Lybrand Consulting gains a competitive edge in the availability of highly marketable and specialized capabilities. Some of these capabilities are:

- A full systems design, development and implementation capability using CASE tools and advanced project management techniques
- A range of technical and advisory industry skills developed through Coopers & Lybrand Consulting's long experience as an auditing and management consulting firm
- Expertise in connectivity solutions—client/server and other distributed processing technologies
- Systems architecture and database expertise to modernize systems and relational database applications

- Strong expertise in advanced technologies and applications, especially in decision support and data warehousing systems

#### *Business Process Reengineering*

Coopers & Lybrand Consulting defines business process reengineering (BPR) as a means of achieving radical improvement in performance and business competitiveness by identifying core business processes. The firm believes it is essential to be selective—choose only one or two processes that will give the greatest return as perceived by the customer—otherwise the changes may be too great for an organization to absorb. However, Coopers & Lybrand Consulting also stresses that BPR is not merely gaining better performance from an organization's information systems.

- Coopers & Lybrand Consulting's prime offering is BreakPoint BPR with four main components:
  - Core process definition
  - BreakPoint identification
  - Process redesign
  - Change management

Other related services that may lead to the use of BPR services include: total quality management and activity- and time-based management.

Coopers & Lybrand Consulting's BPR projects typically involve the redesign of the client products supply chain to deliver improved customer service and reduce lead times and provide greater flexibility and reduce process costs. BPR projects typically lead to a need to redesign and re-implement the information systems support for those processes affected.

Coopers & Lybrand Consulting typically does not have, nor seeks strategic alliances with other vendors related to providing BPR

services. The retention of independence is seen by the firm as a key factor in its services.

Coopers & Lybrand Consulting's proprietary analytic tools and techniques that support business process reengineering services include the following:

- Benchmarking, to focus reengineering efforts on areas of greatest opportunity and set goals for improvement
- Process mapping, to document and examine workflows
- SPARKS process simulator, a workflow reengineering and process modeling tool
- SUMMIT methodologies, to assure information technology supports business strategy and systems are integrated to support redesigned core processes
- Just-in-Time principles, applied to shrink backlog by improving workflow, revamping work space layout and reducing overhead costs
- Supply chain management, an approach to decrease inventory and production costs, improve speed and quality of product distribution
- Cycle time reduction, to improve balance sheet performance by shrinking lead time to maximize return on assets
- Speed to market, to improve research and development and other processes
- Activity-based management, to improve value-added activities and eliminate activities that do not add value to the product or service
- Route mapping, to manage a variety of IT oriented reengineering projects by using

different components from the Firm's IT methodologies

- Change management, to define skills and infrastructure requirements necessary to assure a successful transition to the re-engineered business

#### *Systems Integration*

Coopers & Lybrand Consulting delivers the full life cycle of systems integration services. Offerings include:

- Business and management consulting
- Systems design, development and implementation
- Selection, evaluation and acquisition of hardware, software and telecommunications equipment
- Network management and operations
- Software maintenance

Coopers & Lybrand Consulting also uses strategic alliances to strengthen its systems integration practice areas. The alliances are chosen to increase the scope of the firm's system integration offerings and improve its competitive position in the marketplace.

#### *Outsourcing*

Coopers & Lybrand Consulting offers application maintenance services in four key areas:

- Maintenance outsourcing—Maintenance of legacy software, applications and databases
- Facilities management—Handling of hardware, networks, database administration, building and staffing

- Information service assessments—Analysis of the IT organization and software assets
- Best practices—Identification of the best techniques to maintain legacy systems

### Clients

C&L has over 400 Fortune 1000 clients and a market presence in 125 countries.

### Marketing and Sales

Coopers & Lybrand Consulting's primary "salesforce" is its worldwide network of partners. To support this effort, the firm has a network of marketing and communications professionals located worldwide.

### Alliances

Coopers & Lybrand Consulting maintains vendor relationships with the following companies:

- AT&T GIS
- Boxhill
- Computron
- Dun & Bradstreet Software
- J.D. Edwards
- FTP
- Global Software
- Gupta (Assymetrics)
- Informix
- Mercury
- Mincom
- Novell
- Oracle
- Peoplesoft
- SAP
- Software 2000
- Sybase
- SQA
- System Software Associates
- Viasoft
- Wang

### Competition

Major competitors include Andersen Consulting, Ernst & Young, KPMG Peat Marwick, Deloitte & Touche, McKinsey & Company, Boston Consulting Group, Booz, Allen & Hamilton and Gemini Consulting.

### INPUT Assessment

Some of Coopers & Lybrand Consulting's strengths include:

- Expertise in both strategy and operational consulting
- Alliances with major information technology vendors including IBM, HP and Oracle
- Knowledge of manufacturing and financial services in relation to information technology planning

Some of the challenges faced by the firm include the following:

- To develop a flexible internal organization to deliver information services within the existing partnership structure
- To recruit staff of the right caliber to take the company strategy forward

C&L believes one of the key driving forces in its market for information services is the increasing complexity of delivering products to sophisticated buyers.

For C&L clients, this means that customers are increasing their expectations of quality, flexibility and timeliness from their suppliers. Furthermore, the rapid pace of technology developments means C&L customers are re-evaluating their own customers' needs and are measuring themselves against industry benchmarks.

Reengineering of the U.S. corporation and technology developments are driving the increase in C&L's information services practices.



# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

March 1995

## Cordant, Inc.

**President & CEO:** Peter P. Kusek  
**11400 Commerce Park Drive**  
**Reston, VA 22091**  
**Phone:** (703) 758-7000  
**Fax:** (703) 758-7380

**Status:** Private  
**Employees:** 200  
**Revenue:** \$100,000,000 \*  
**Fiscal Year End:** 12/31/94

\*INPUT estimate

### Key Points

- Cordant primarily serves the federal market but has increased its commercial client base by more than 20% during the past three years.
- The company has recently been awarded contracts with the Department of the Army, the Postal Service, the Office of Personnel Management, the U.S. Courts Administrative Offices and the U.S. Navy.
- The company has been rated as one of the top 30 providers of systems integration services to the federal government.

### Company Description

Cordant is a systems integration and professional services firm providing information systems and network solutions for the federal government and commercial sectors. Over the past 26 years, the company has implemented numerous large, complex federal government systems.

Cordant is an employee-owned company.

### Company Strategy

Cordant's strategy is to be known in its marketplace as the company with the best satisfied customers.

The company's goal is to deliver customized solutions to complex information problems on time and within budget.

## Financials

INPUT estimates Cordant's 1994 revenue was approximately \$100 million, the same as in 1993 and 1992.

### *Revenue Analysis by Product/Service:*

Approximately 80% of Cordant's revenue is derived from systems integration and 20% from professional services.

## Market Financials

Approximately 80% of Cordant's revenue is derived from the federal government and 20% from commercial sources.

## Geographic Markets

One hundred percent of the company's revenue is derived from the U.S.

Cordant operates out of its headquarters in Reston (VA). Cordant also has employees located at various client sites.

## Key Products and Services

Cordant offers a range of products and services to support large, complex integration and information systems programs.

- The company has experience with all phases of program management, including design, engineering, development, quality assurance, procurement, testing, integration, program management, training and customer support.
- Cordant customarily operates as a prime contractor, serving as a single point-of-contact for its customers.

Cordant offers special expertise in the areas of:

- Quality management
- Systems architecture
- Systems engineering and integration

- Open systems and standards
- Fault tolerant systems
- Tempest computer systems and peripherals
- Communications networks—LAN, micro-to-mainframe, WAN, FTS2000
- Operating systems
- Applications software development
- Database management systems
- Computer-aided design, engineering, manufacturing solutions software support and geographic information systems
  - Instructor-led training
  - Computer-based training
  - Documentation
  - Telephone hotline maintenance
  - Hardware maintenance
  - Software maintenance
- Integrated workgroup solutions
  - Business process re-engineering
  - Document imaging
  - Electronic records management
  - Document storage subsystems
  - Forms automation
  - RAID subsystems
  - Electronic data interchange
- Library automation systems

Examples of significant contract awards include the following:

- A 12-year, \$550 million contract with the Naval Facilities Engineering Command (NAVFAC CAD2)—shared with Intergraph Corporation—to provide computer-aided design ADP hardware, software, maintenance, training and technical support services.

- A \$60 million contract with the Department of the Army's Defense Medical Systems Support Center Automation Support Hardware (DASH) program to provide integrated, POSIX-compliant platforms as a foundation for processing military hospital information in the DOD Health Care System
- A \$31 million systems integration contract with the U.S. Postal Service for the manufacture, integration, installation and ongoing support of printer/label applicator (P/LA) systems
- A \$16 million contract with the U.S. Postal Service's Forms Automation Program to provide electronic forms design and fill-in software.
- A five-year, \$37.3 million contract with the U.S. Courts Administrative Offices to provide systems integration services in support of bankruptcy noticing. Cordant has created a Bankruptcy Noticing Center to accept bankruptcy case data in multiple formats and on different media from all 212 U.S. Bankruptcy Courts.

Examples of systems designed and implemented by Cordant include the following:

- Re-engineering Sprint Cellular Company's customer service agreement tracking and customer service systems with a client/server paperless office environment
- Teaming with Apple's Federal Division to provide integrated UNIX environment for multimedia processing in support of the Defense Intelligence Agency's LAN and Department of Defense Intelligence and Information Systems networks
- Engineering an advanced optical digital-based records management system that includes hardware, software, maintenance, training, data and system analyst support for the U.S. Air Force's Automated Records Management Systems (ARMS)

- DataLib, an integrated on-line library system developed by Cordant, is currently installed at 11 Fortune 500 companies and 7 U.S. government agencies.

## Clients

A partial list of clients follows:

*Federal Clients*—Central Intelligence Agency, Consumer Product Safety Commission, Defense Communications Agency, Defense Intelligence Agency, Defense Logistics Agency, Department of Agriculture, Department of Commerce, Department of Energy, Department of Interior, Department of Justice, Department of Labor, Department of State, Department of the Treasury, Drug Enforcement Administration, Executive Office of the President, Federal Aviation Agency, Federal Communications Commission, Federal Railroad Administration, General Services Administration, Health Care Financing Administration, Internal Revenue Service, Joint Chiefs of Staff, NASA, National Institutes of Health, National Meteorological Center, National Transportation Safety Board, NATO, Office of Personnel Management, Office of the Secretary of Defense, Secret Service, Social Security Administration, U.S. Air Force, U.S. Army, U.S. Bankruptcy Courts, U.S. Coast Guard, U.S. Courts, U.S. Marine Corps, U.S. Marshals Service, U.S. Navy, U.S. Postal Service, U.S. Senate, Veterans Administration and Virginia Contracting Activity.

*Commercial Clients*—Air Products and Chemicals, Bankers Trust Company, Canadian Bankers Association, Chevron Research USA, David Sarnoff Research Center, DOW Chemical, General Motors, Kerr-McGee, Marion Merrel Dow Pharmaceuticals, Martin Marietta, MCI, Merck, Sharp & Dohme Pharmaceuticals, Miles-Mobay, Mobil Oil USA, Moore Business Forms, Sandoz Pharmaceuticals, Schlumberger, Software AG of North America, Sprint Cellular Company, Syntex USA and Xerox.

## **Marketing and Sales**

Cordant markets its services through a direct sales force.

## **Alliances**

Cordant has a range of teaming partners and subcontractors in support of the services it provides to its clients, including the following:

- U.S. Navy Facilities CAD2—Team Cordant is composed of Autodesk, Softdesk, ESRI, Informix, Sun and many others.
- DASH contract—Subcontractors include Data General, Santa Cruz Operation, Informix and InterSystems.
- Defense Intelligence Agency Systems and Software Services contract—Teaming partners include Apple's Federal Division.
- U.S. Courts Bankruptcy Noticing—Moore Business Communications.

## **Competitors**

Cordant's primary competitors include Computer Sciences Corporation and Intergraph.

---

**CORDANT, INC.**

11400 Commerce Park Drive  
Reston, VA 22091  
Phone: (703) 758-7000  
Fax: (703) 758-7380

President & CEO:	Peter P. Kusek
Status:	Private Corporation
Total Employees:	187
Total Revenue:	\$100,000,000
Fiscal Year End:	12/31/92

---

**Key Points**

- Cordant primarily serves the federal market but has increased its commercial client base by over 20% during the past two years.
- The company has recently been awarded contracts with the Department of the Army, the Postal Service, the Office of Personnel Management, and the U.S. Courts Administrative Offices.
- The company has been rated as one of the top 30 providers of systems integration services to the federal government.
- Cordant recently signed a \$5.3 million contract with Novell, Inc. to manage Novell's Trusted Network Computing Environment initiative.
- Cordant has received \$125 million in new business from commercial and federal clients in the first half of 1993.

**Company Description**

Cordant, Inc. is a systems integration and professional services firm providing information systems and network solutions for the federal government and commercial sectors. Over the past 25 years, the company has implemented numerous large, complex federal government systems.

Cordant previously operated as Centel Federal Systems, a unit of Centel Corporation.

- In March 1990, CFSI Holdings Corporation was formed by Centel Federal Systems management to acquire Centel Federal Systems from Centel Corporation.
- During 1992, Centel Federal Systems changed its name to Cordant, Inc. to clarify the identity of the company as a separate business from Centel.

Cordant's management currently owns a majority interest in Cordant, with Moore Business Forms as a minority investor.

**Strategy**

Cordant's strategy to be known is its marketplace as the company with the best satisfied customers.

The company's goal is to deliver customized solutions to complex information problems on time and within budget.

**Financials**

Cordant's 1992 revenue reached an estimated \$100 million, the same as 1991 revenue of \$100 million. Lack of growth was attributed to marketplace stagnation.

Revenue has declined from a high of \$131 million in 1990, due to the completion of a major contract with the Virginia Contracting Activity.

The company has already received \$125 million in new business from both commercial and federal clients in the first half of this year and anticipates similar activity for the second half of the year.

**Alliances**

Cordant has a range of teaming partners and subcontractors in support of the services it provides to its clients, including the following:

- Defense Medical Systems Support Center Automation Support Hardware (DASH) contract: Subcontractors include Data General, Santa Cruz Operation, Informix, and InterSystems.

- U.S. Office of Personnel Management Laptop Computers contract: Subcontractors include GRid.
- Defense Intelligence Agency Systems and Software Services contract: Teaming partners include Apple's Federal Division.
- U.S. Courts Bankruptcy Noticing: Moore Business Communications will provide printing services through its Thurmont (MD) facility.

Cordant also has various alliances with Novell and Moore Business Forms.

### **Key Products and Services**

Approximately 80% of Cordant's 1992 revenue was derived from systems integration and 20% from professional services.

Cordant offers a range of products and services to support large, complex computer and telecommunications programs.

- The company has experience with all phases of program management, including design, engineering, development, quality assurance, procurement, testing, integration, program management, training, and customer support.
- Cordant customarily operates as a prime contractor, serving as a single point-of-contact for its customers.

Cordant offers special expertise in the areas of :

- Quality management
- Systems architecture
- Systems engineering and integration
- Open systems and standards
- Fault tolerant systems
- Tempest computer systems and peripherals
- Communications networks--LAN, micro-to-mainframe, WAN, FTS2000
- Operating systems
- Applications software development

- Data base management systems
- Computer-aided design, engineering, and manufacturing solutions software support
  - Instructor-led training
  - Computer-based training
  - Documentation
  - Telephone hotline maintenance
  - Hardware maintenance
  - Software maintenance
- Integrated workgroup solutions
  - Business process re-engineering
  - Document imaging
  - Electronic records management
  - Document storage subsystems
  - Forms automation
  - RAID subsystems
  - Electronic data interchange
- Library automation systems
- Security solutions (Assure<sup>®</sup> products)

Examples of recent contract awards include the following:

- A \$60 million contract with the Department of the Army's Defense Medical Systems Support Center Automation Support Hardware (DASH) program to provide integrated, POSIX-compliant platforms as a foundation for processing military hospital information in the DOD Health Care System
- A \$16 million contract with the U.S. Postal Service's Forms Automation Program to provide electronic forms design and fill-in software
- A \$4 million contract with the U.S. Office of Personnel Management to provide secure laptop computers using Cordant's Assure<sup>®</sup> product line
- A five-year, \$37.3 million contract with the U.S. Courts Administrative Offices to provide systems integration services in support of bankruptcy noticing. Cordant has created a Bankruptcy Noticing Center to accept bankruptcy case data in multiple formats and on different media from all 212 U.S. Bankruptcy Courts.

- Cordant will retrieve case data in paper copy, magnetic media format, or electronic transmission and enters it into a Cordant-developed Informix data base. Notice addresses will be confirmed and sorted by carrier route by Cordant.
- Printing will be handled by Moore Business Communications Services.
- Cordant also will provide training for users at all court sites and staff a 16-hour per day Customer Service Response Center.

Examples of systems designed and implemented by Cordant include the following:

- Re-engineering Sprint Cellular Company's customer service agreement tracking and customer service systems with a client/server paperless office environment
- Teaming with Apple's Federal Division to provide integrated UNIX environment for multimedia processing in support of the Defense Intelligence Agency's LAN and Department of Defense Intelligence and Information System networks
- Engineering an advanced optical digital-based records management system that includes hardware, software, maintenance, training, data, and system analyst support for the U.S. Air Force's Automated Records Management Systems (ARMS)
- Providing the U.S. Postal Service with a high-capacity, computer-based, fault-tolerant change-of-address mail forwarding system known as CFS II
- Implementing a nationwide computer-based office automation and automated training system for the Internal Revenue Service
- Providing the General Services Administration (GSA) technical assistance and management services (TAMS) to assist GSA's oversight of FTS2000, a multibillion dollar project to modernize the federal government's telecommunications networks
- DataLib, an integrated on-line library system developed by Cordant, is currently installed at 11 Fortune 500 companies and 7 U.S. government agencies.

In addition to Cordant's systems integration and professional services, the company also offers its Assure<sup>®</sup> information security products. The Assure<sup>®</sup> family of security products includes:

- Assure<sup>®</sup> for PCs, for control over system access and user auditing
- Assure<sup>®</sup> for Networks, providing protection for workstations and servers
- Assure<sup>®</sup> Series 4, which secure the DOS/Widows PC workstation environment, providing security for notebooks, laptops, and desktops in standalone, network, and communications environments

**Industry Markets**

Approximately 80% of Cordant's 1992 revenue was derived from the federal government. The remainder is derived from commercial sources.

**Clients**

A partial list of clients follows:

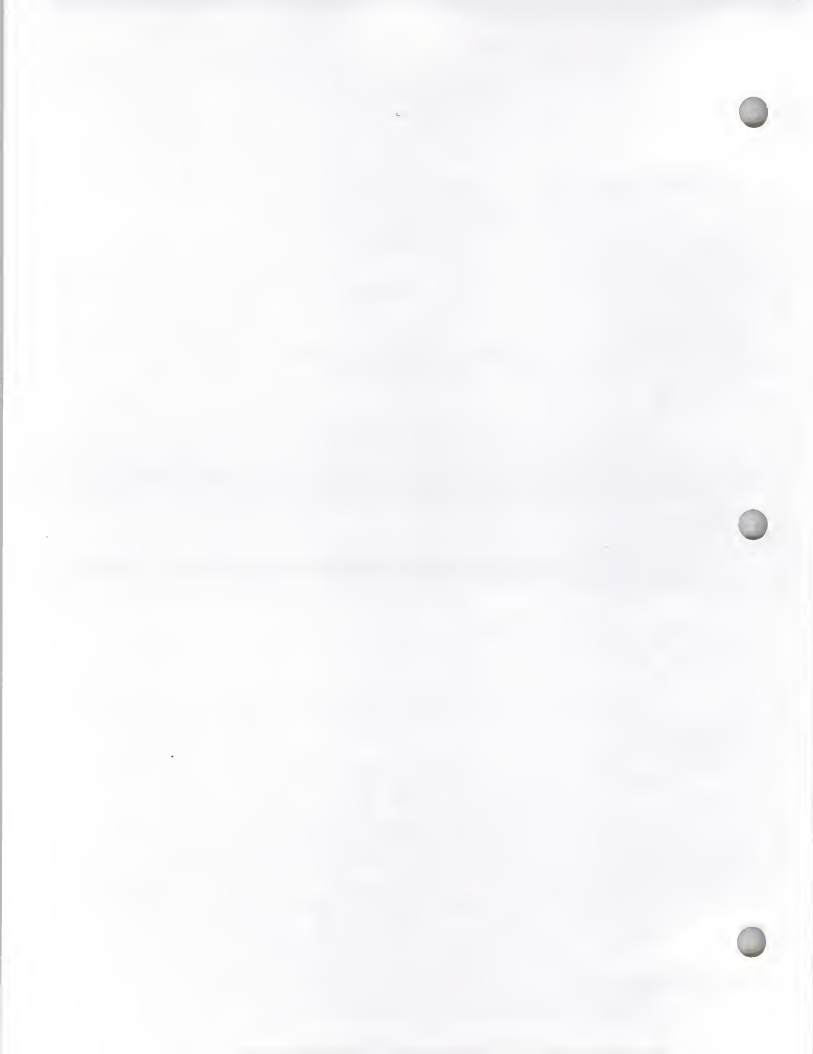
Federal Clients: Central Intelligence Agency, Consumer Product Safety Commission, Defense Communications Agency, Defense Intelligence Agency, Defense Logistics Agency, Department of Agriculture, Department of Commerce, Department of Energy, Department of Interior, Department of Justice, Department of Labor, Department of State, Department of the Treasury, Drug Enforcement Administration, Executive Office of the President, Federal Aviation Agency, Federal Communications Commission, Federal Railroad Administration, General Services Administration, Health Care Financing Administration, Internal Revenue Service, Joint Chiefs of Staff, NASA, National Institutes of Health, National Meteorological Center, National Transportation Safety Board, NATO, Office of Personnel Management, Office of the Secretary of Defense, Secret Service, Social Security Administration, U.S. Air Force, U.S. Army, U.S. Bankruptcy Courts, U.S. Coast Guard, U.S. Courts, U.S. Marine Corps, U.S. Marshals Service, U.S. Navy, U.S. Postal Service, U.S. Senate, Veterans Administration, and Virginia Contracting Activity.

Commercial Clients: Air Products and Chemicals, Bankers Trust Company, Canadian Bankers Association, Chevron Research USA, David Sarnoff Research Center, DOW Chemical, General Motors, Kerr-McGee, Marion Merrel Dow Pharmaceuticals, Martin Marietta, MCI, Merck, Sharop & Dohme Pharmaceuticals, Miles-Mobay, Mobil Oil USA, Moore Business Forms, Sandoz Pharmaceuticals, Schlumberger, Software AG of North America, Sprint Cellular Company, Syntex USA, and Xerox.



One hundred percent of the company's revenue is derived from the U.S.

Cordant operates out of its headquarters in Reston (VA). Cordant also has employees located at various client sites.



## COMPANY PROFILE

### **CORNELL COMPUTER CORPORATION**

125 East Bethpage Road  
Plainview, NY 11803  
(516) 420-5900

John Tutunjian, Chairman and Co-CEO  
Jerome Gilbert, President and Co-CEO  
Division of the Computer Power Group, Ltd.  
Total Employees: 453  
Total Revenues, Fiscal Year End  
9/30/88: \$35,000,000

### **The Company**

Cornell Computer Corporation, founded in 1971, provides various professional and systems integration services to Fortune 1000 companies.

In August 1987, Cornell was acquired by the Computer Power Group, an Australian-based computer consulting firm.

Cornell is organized into two major groupings, as follows:

- Cornell Computer, with 14 offices located in ten states throughout the U.S., provides professional and support services.
- The Telecomm Division, based in Edison (NJ), provides professional services to AT&T and the Regional Bell Operating Companies.

Total fiscal 1988 revenue reached \$35 million, a 6% increase over fiscal 1987 revenue of \$33 million. A five-year revenue summary follows:

#### **CORNELL COMPUTER CORPORATION FIVE-YEAR REVENUE SUMMARY (\$ millions)**

ITEM	FISCAL YEAR				
	9/88	9/87	9/86	9/85	9/84
Revenue	\$35.0	\$33.0	\$28.4	\$21.0	\$16.0
• Percent increase (decrease) from previous year	6%	16%	35%	31%	37%

Cornell has sold its Software Products Division for an undisclosed sum. The division marketed two application software products as follows:

- Carepak, introduced in 1985, is used for billing and payroll for home healthcare services by hospitals and healthcare agencies providing home healthcare services.
- The LAWTRAC series of software for legal departments of corporations offered applications for litigation tracking, lease tracking, and secretarial functions.

As of January 1989, Cornell had approximately 450 employees, segmented as follows:

Marketing and sales	30
Customer support and research and development	400
Computer operations	3
General and administrative	<u>20</u>
	453

- Cornell also subcontracts as needed.

#### Key Products and Services

Approximately 96% of Cornell's fiscal 1988 revenue was derived from its various professional services, 3% from systems integration, and 1% from software products. A further breakdown of fiscal 1988 revenue according to categories of service identified by Cornell follows:

Professional and technical resources	75%
Software maintenance services	10%
Professional services	5%
Education and training	5%
Systems integration	3%
Operations management	1%
Application software	<u>1%</u>
	100%

Cornell provides professional services to approximately 250 Fortune 1000 clients. Cornell's professional services are either on a fixed price or a time and materials basis. In addition to custom development of software, Cornell can provide EDP audits and other services as follows:

- Professional and technical resources:
  - Feasibility studies
  - Systems analysis and design
  - Programming
  - Testing
  - Package installation and modification
  - Hardware and software conversion/migration
  - Implementation services to AS/400 and DB2 customers  
(Cornell is an IBM Business Partner)
- Software maintenance services:
  - Systems enhancements
  - Statutory programming changes
  - Emergency maintenance
  - PC software insurance
  - Documentation support
- Professional services:
  - Business problem definition.
  - Cause analysis
  - Solution implementation
- Education and training:
  - Customized and prepackaged courses
  - On-the-job training programs
  - Programming languages, operating systems,  
PC utilization
  - User training

A partial list of projects performed by Cornell over the past two years includes the following:

- Major banking organizations:
  - Cornell designed, developed, and programmed Commercial Loan Data Systems. The company converted batch data entry to on-line data entry, including automatic general ledger entries and report generation on CICS printers in user areas with batch and on-line systems interfaces.
  - Cornell designed, developed, implemented, and maintained Commodity Pricing Systems which maintain current commodity prices and current values of loan customers' collateral.

- Cornell designed, developed, documented, implemented, and maintained Credit Card Protection/"Protection Plus" Systems.
- The company studied the feasibility, redesigned, programmed, implemented, documented, and maintained Demand Deposit Accounting Systems for a combination of Domestic Commercial Deposit Systems and foreign Vostro Systems.
- Cornell has developed and implemented various Stocks and Bonds Brokerage applications, including International Book Entry, Multiple Offerings, Cross Account Referencing, Economic Trading P&L, Security Inventory, Account Profitability, and customer on-line access.
- Municipal government: Cornell has designed, developed, implemented, and maintained a variety of systems including:
  - Probation and Family Court Tracking (Justice Department)
  - Medical Records (Hospital)
  - Restitution Accounting (Criminal Justice)
  - Police Case Offense Monitoring (Police Department)
  - Admissions Registration (Health Department)
  - Tax Delinquency and Cash Receipts (Tax Collector)
  - Property Tax (Assessment Department)
  - Fire Marshal Monitoring (Fire Department)
  - Personnel Time and Leave (Police Department)
  - Hazardous Waste (Environmental Affairs)
  - Welfare Management (Department of Social Services)
  - Budget Compliance (Executive Department)
  - Capital Projects (Public Works Department)
  - Payroll/Personnel (Comptroller)
  - Public Assistance Tracking (Department of Welfare Services)
  - Food Stamp Utilization (Department of Social Services)
  - Fair Labor Standards Act (Department of Labor)
  - DWI Monitoring (Police Department)
  - Case Tracking (District Attorney)
  - Court Docket (Justice Department)
- Miscellaneous:
  - Cornell redesigned a complete financial operating system, from international data entry to on-line inquiry and field reporting, for a major pharmaceutical firm.

- Cornell implemented a Vehicle Invoicing System for all cars and trucks built in North America for a major automotive manufacturer.
- Cornell designed and implemented a worldwide electronic mail and order entry system for a major communications company.
- Cornell designed and implemented an International Office Automation System for an international software services firm.
- Cornell designed, implemented, and continues to maintain a U.S. Distribution and Billing System for a major pharmaceutical firm.
- Cornell designed and implemented an on-line Family Service and Child Abuse Tracking System for a large state government.
- Cornell designed, implemented, and provides systems operation services for a major health care provider.
- Cornell designed and implemented an entry-level Information Systems Training Program for a major pharmaceutical manufacturer.

**Industry Markets**

Approximately 20% of fiscal 1988 revenue was derived from the telecommunications industry. The remaining 80% was derived from various industries including banking and finance, manufacturing, health care, and state and local government.

**Geographic Markets**

Cornell derives 100% of its revenue from the U.S.

Cornell maintains offices located in Phoenix (AZ); Torrance, Irvine, and San Francisco (CA); Hartford (CT); Fort Lauderdale and Orlando (FL); Towson (MD); Boston (MA); Edison (NJ); Albuquerque (NM); New York and Plainview (NY); and Philadelphia (PA).

**Computer  
Hardware and  
Software**

Cornell has the following computers installed in support of its professional services:

- 15 IBM PC/XT/ATs, running under PC-DOS
- 7 Toshiba 1200 laptops

## COMPANY PROFILE

**CORNELL COMPUTER CORPORATION**  
125 East Bethpage Road  
Plainview, NY 11803  
(516) 420-5900

Jerome Gilbert, President  
Private Corporation  
Total Employees: 355  
Total Revenues, Fiscal Year End  
9/30/85: \$21,000,000

### THE COMPANY

- Cornell Computer Corporation, founded in 1971, provides custom software development services and application software products to Fortune 500 companies.
- Fiscal 1985 revenue reached \$21 million, a 31% increase over fiscal 1984 revenue of \$16 million. A five-year revenue summary follows:

#### CORNELL COMPUTER CORPORATION FIVE-YEAR REVENUE SUMMARY (\$ millions)

ITEM \ FISCAL YEAR	9/85	9/84	9/83	9/82	9/81
Revenue	\$21.0	\$16.0	\$11.7	\$10.7	\$6.8
• Percent increase from previous year	31%	37%	9%	57%	48%

- As of February 1986, Cornell had approximately 355 full-time, permanent employees, segmented as follows:

Marketing/sales	25
Consultants	300
General and administrative	<u>30</u>
	355

- Cornell also subcontracts consultants as needed.
- Cornell is organized into nine divisions, as follows:
  - Seven divisions are located in six states throughout the U.S. to provide professional services.
  - The Telecomm Division provides professional services to AT&T and the Bell group of companies.

## CORNELL COMPUTER CORPORATION

- The Software Products Division provides application software products across the U.S.

### KEY PRODUCTS AND SERVICES

- Virtually all of Cornell's fiscal 1985 revenue was derived from professional services. Software development services accounted for 99%, and consulting, and education and training services for 1%. Cornell also derived minimal revenue from sales of application software packages. Cornell management expects software sales to represent a greater part of fiscal 1986 revenue.
- Cornell provides professional services to approximately 150 Fortune 500 clients. Cornell's professional services are either on a fixed price or a time and materials basis. In addition to custom development of software, Cornell can provide EDP audits, feasibility studies, systems documentation, and other services. A partial list of Cornell's hardware, software, and language capabilities is shown in the exhibit.
- The Software Products Division currently markets two application software products.
  - Carepak, introduced in 1985, is used for billing and payroll for home healthcare services by hospitals and healthcare agencies providing home healthcare services.
    - The system operates on the Wang VS series of computers. The cost of an average software system is \$75,000. There are currently three installations of Carepak.
  - Cornell markets three different levels of their LAWTRAC software to legal departments of corporations. LAWTRAC is not targeted to law firms.
    - LAWTRAC Executive and LAWTRAC Junior, introduced in September 1984, provide litigation tracking.
    - LAWTRAC Secretary, introduced in February 1986, provides support for the corporate secretary function.
    - LAWTRAC Lease, also introduced in February 1986, tracks all lease details for corporations.
    - LAWTRAC operates on IBM PC/XT or PC/AT and compatibles running the MS-DOS operating system. The price for the software ranges from \$2,995 to \$7,995. There are currently 30 installations of LAWTRAC Executive and LAWTRAC Junior, 6 installations of LAWTRAC Secretary, and 4 installations of LAWTRAC Lease.

EXHIBIT

CORNELL COMPUTER CORPORATION  
PROFESSIONAL SERVICES CAPABILITIES

<ul style="list-style-type: none"> <li><b>HARDWARE</b> <ul style="list-style-type: none"> <li>Burroughs: -700, -800 &amp; -900 Series 3500, 5500 1855, 1860</li> <li>CDC: 3300, 3800 6400, 6600, 7600 Omega</li> <li>Honeywell: 200, 2000 Series 60 Series Level 6, 66</li> <li>IBM: 7000 &amp; 1400 Series S/360, S/370 all models 3030 Series 3080 Series 4300 Series 8100 System/3 all models System/32, /34, /36, /38 Series I PC/XT, AT</li> <li>NCR: Century 100, 200, 300 Criterion 8500 8200 Series 9000 Series</li> <li>UNIVAC: 418, 494 9200, 9300 9400, 9480 System 70 1100, 1108, 1180</li> <li>DATA GENERAL: NOVA ECLIPSE</li> <li>Datapoint: 1100, 2100 5500, 6600 1500 1800, 3800</li> <li>DEC: PDP-8 PDP-11 10,20 VAX 11/750, 11/780</li> <li>Hewlett-Packard: 1000 2000 3000</li> <li>PRIME: 400 500 550 600</li> <li>WANG: Data 100 1500 2200VS 3300</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>LANGUAGES</b> <ul style="list-style-type: none"> <li>Assembly <ul style="list-style-type: none"> <li>Autocoder, Easy Coder</li> <li>BAL, ALP</li> <li>NEAT, NEAT-3</li> </ul> </li> <li>Programming <ul style="list-style-type: none"> <li>ALGOL</li> <li>APL</li> <li>BASIC, BASIC+, BASIC+2, CBASIC</li> <li>C</li> <li>COBOL</li> <li>DATABUS</li> <li>DYLL260</li> <li>FOCUS</li> <li>FORTRAN</li> <li>JOVIAL</li> <li>PASCAL</li> <li>PL/1</li> <li>RPG, RPG II, RPG III</li> <li>SNOBOL</li> </ul> </li> </ul> </li> <li><b>OPERATING SYSTEMS</b> <ul style="list-style-type: none"> <li>ACF</li> <li>ASP</li> <li>CP/M</li> <li>DOS</li> <li>DOS/VS</li> <li>DOS/VSE</li> <li>GCOS</li> <li>HASP</li> <li>IMOS</li> <li>IRX</li> <li>JES2</li> <li>JES3</li> <li>MFT</li> <li>MIDAS</li> <li>MMAP</li> <li>MPE</li> <li>MUMPS</li> <li>MVS</li> <li>MVT</li> <li>OS</li> <li>OS/VS</li> <li>RSTS:E</li> <li>RSX-11D</li> <li>RSC-11M</li> <li>RT-11</li> <li>UNIX</li> <li>VM</li> <li>VM EXEC5</li> <li>VRX</li> </ul> </li> <li><b>SYSTEMS SOFTWARE</b> <ul style="list-style-type: none"> <li>ADABAS</li> <li>BIS</li> <li>BMS</li> <li>BTS</li> <li>CANDE</li> <li>CCP</li> <li>CICS-Macro</li> <li>CICS-Command</li> <li>CMS</li> <li>CULPRIT</li> <li>DATAMACS</li> <li>DMS</li> <li>EASYTRIEVE</li> <li>IDMS</li> <li>IMAGE</li> <li>IMS-DB (DL, I)</li> <li>IMS-DC</li> <li>LIBRARIAN</li> <li>MFS</li> <li>OWL</li> <li>PANVALET</li> <li>PARS</li> <li>ROSCOE</li> <li>SAS</li> <li>SLICK</li> <li>SPF</li> <li>SPSS</li> <li>System 2000</li> <li>TASKMASTER</li> <li>TOTAL</li> <li>TSO</li> <li>VOLLIE</li> <li>VSPC</li> </ul> </li> </ul>
---	---

## CORNELL COMPUTER CORPORATION

### INDUSTRY MARKETS

- Approximately 20% of fiscal 1985 revenue was derived from the telecommunications industry. The remaining 80% was derived across a variety of industry sectors.

### GEOGRAPHIC MARKETS

- Cornell derives all of its revenue from across the U.S.
- Cornell maintains seven divisions located in Torrance (CA), Stamford (CT), Miami, Boston, Edison (NJ), and New York City and Plainview (NY).

### COMPUTER HARDWARE

- Cornell has six IBM PC/XT computers running the PC-DOS operating system.

# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

September 1994

## Corporate Computing International

**President  
& CEO:** Christine Comaford  
2549 Waukegan Road  
Suite 108  
Bannockburn, IL 60015  
**Phone:** (708) 374-1995  
**Fax:** (708) 374-1124

Status:	Private
Employees:	25 (9/94)
Revenue:	\$ 4,000,000*
Fiscal Year End:	12/31/94

\* Company estimate

### Company Description

Corporate Computing, founded in 1987, provides consulting, training and software products in the areas of graphical user interface (GUI) standards and client/server development.

### Organization and Structure

Corporate Computing is headquartered in Bannockburn (IL) and has regional offices in Concord and Sausalito (CA) and Issaquah (WA).

### Company Strategy

Corporate Computing's strategy is to provide products and services to major corporations in the areas of client/server and GUI development that minimize client risk.

## Financials

Corporate Computing estimates that its 1994 revenue will reach \$4 million, a 100% increase over 1993 revenue of \$2 million. The company has grown more than 50% annually since its inception.

## Revenue Analysis by Product/Service

Approximately 50% of Corporate Computing's revenue is derived from education services, 40% from software products and 10% from consulting.

## Market Financials

Corporate Computing's cross-industry products and services are used by more than 460 clients in a range of industries. Many clients are Fortune 500 companies.

## Geographic Markets

An estimated 95% of Corporate Computing's 1994 revenue will be derived from the U.S. and 5% from international sources, including Canada, Europe and South America.

## Employees

As of December 1993, Corporate Computing had 5 employees. The company currently has 25 employees, segmented as follows:

Marketing/sales .....	8
Product development .....	3
Consulting and training .....	5
Customer support .....	3
General and administrative .....	6
	25

Corporate Computing employs consultants that have assisted in the development of Microsoft Windows, OS/2 and numerous GUI and client/server applications.

- All instructors are senior analysts with a minimum of three years GUI design and seven years of software development experience.
- Many of the company's consultants speak on and publish articles about GUI and client/server-related issues.

## Key Products and Services

Corporate Computing offers consulting, training and software products as follows:

### *Software Products*

GUI Guidelines™ consists of on-line help software explaining GUI design guidelines for all components of GUI application design.

- The software provides techniques for creating consistent GUI components; popup illustrations of GUI design standards and terms; easy to follow rules and recommendations; and forms for maintaining and enhancing GUI Guidelines.
- GUI Guidelines is available in Windows, OS/2, PowerBuilder and Motif versions.

RADPath™ is a Windows-based process management product that provides the knowledge transfer to support rapid iterative client/server application development.

- RADPath provides Infrastructure, Management and Development paths that allow the manager to add or delete project-specific tasks. The Infrastructure Path outlines all organizational and technical foundations that must be set up to support GUI client/server development. The Management Path outlines the procedures and processes needed for management of a specific project. The Development Path

outlines all procedures and processes needed for the development of a specific project.

- Other features include on-line checklists for a consistent software development process and built-in usability and code reuse.

### *Consulting*

Consulting services are offered in the areas of :

- GUI design and review
- GUI Guidelines customization
- RADPath implementation and customization
- Executive client/server jump-start program

### *Training/Seminars*

Corporate Computing offers the following seminars which are available as classroom lectures with hands-on learning exercises.

- Effective GUI Design™ for Developers
- Effective GUI Design™ for End Users
- Effective GUI Migration™ Strategies for Managers
- Effective GUI Client/Server Development with RADPath™

Instruction is provided at the clients' site and public sites throughout the U.S. and Canada.

### **Clients**

A partial client list by industry is shown in the exhibit on the following page.

### **Marketing and Sales**

Corporate Computing markets its products through a direct sales force and selected

business partners located in North America and Europe.

### **Alliances**

Corporate Computing has alliances with various companies including the following:

- *Business Partners*—AJJA Information Technology Consolidated, PowerCerv, Visual Systems Development Corporation, Altair Automation (Benelux), milestone software GmbH (Germany), SEQUEL (U.K.)
- *Training Brokers*—NETG, DCI
- *Licensees*—Powersoft, CSC Consulting, Texas Instruments

**Exhibit**  
**Corporate Computing, Inc.**  
**Partial Client List**

<p><b>Aerospace</b>—Lockheed Missiles &amp; Space</p> <p><b>Airlines</b>—American Airlines, United Airlines</p> <p><b>Agriculture Manufacturing</b>—John Deere</p> <p><b>Banking, Financial</b>—Charles Schwab, Citibank, Discover Card, JP Morgan, Merrill Lynch, Wells Fargo Bank</p> <p><b>Chemicals</b>—Monsanto</p> <p><b>Computer/Industrial Equipment</b>—Chevron Information Technology</p> <p><b>Computer Software/Hardware</b>—Compaq Computer Corporation, Hewlett-Packard, IBM, Intersolv, Lotus Development, Microsoft, Powersoft,</p> <p><b>Consulting</b>—Andersen Consulting, EDS, HP Consulting Services, KPMG Peat Marwick, Price Waterhouse</p>	<p><b>Consumer Goods</b>—3M Corporation, Frito Lay, Johnson Wax, Kraft General Foods, Levi Strauss &amp; Co., Miller Brewing, Quaker Oats Co., Reebok, Solo Cup, The Clorox Co., The Gap, United Parcel Service</p> <p><b>Electronics</b>—Duracell, Hitachi, Intel, NEC Technologies, Sony Electronics, Texas Instruments</p> <p><b>Food &amp; Beverage</b>—Boston Chicken, Coca Cola, Kellogg Co., RJR Nabisco Foods Group, Pepsi Cola Corporation</p> <p><b>Government Public Services</b>—The Federal Reserve, U.S Customs Service, U.S. Department of Energy, U.S. Navy, United Nations</p> <p><b>Insurance</b>—Allstate Insurance Co., Cigna</p> <p><b>Medical, Managed Care</b>—Humana, Inc.</p> <p><b>Metals</b>—Aluminum Co. of America</p> <p><b>Manufacturing</b>—Boehringer Mannheim, Xerox Corporation, Zenith Co.</p>	<p><b>Options Exchange</b>—Chicago Mercantile Exchange, Dow Jones &amp; Co.</p> <p><b>Petroleum Refining</b>—ARCO Products Co., Exxon Co., Mobil Oil Co., Pennzoil Co., Phillips Petroleum, Texaco E&amp;P</p> <p><b>Pharmaceuticals</b>—Abbott Laboratories, Eli Lilly &amp; Co., G.D. Searle, Upjohn Co.</p> <p><b>Publishing and Printing</b>—Dun &amp; Bradstreet</p> <p><b>Retail</b>—Dayton Hudson Dept. Stores, K-Mart Corporation, Sears, Roebuck &amp; Co., Target Stores</p> <p><b>Software Development</b>—Sybase, Inc.</p> <p><b>Telecommunications</b>—AT&amp;T, Southwestern Bell, Sprint, Unisys Corp.</p> <p><b>Transportation/Travel</b>—Sabre Travel Information</p> <p><b>Utilities</b>—Consolidated Edison of NY</p>
--	--	--

**CORPORATE SOFTWARE INC.**

275 Dan Road  
Canton, MA 02021  
Phone: (617) 821-4500  
Fax: (617) 821-5688

Chairman & CEO: Morton H. Rosenthal  
President: Steve Moore  
Status: Public Corporation  
Total Employees: 650  
Total Revenue: \$301,085,000  
FYE: 12/31/92

---

**Key Points**

- Corporate Software Inc. (CSI) launched a new personal computer support business in June 1991 that offers help desk outsourcing. This support business is designed to offer telephone and onsite support for corporate enduser support groups and endusers. Outsourcing services are available to corporations, software publishers, personal computer manufacturers and distributors, value-added resellers and systems integrators.
- In 1992, CSI was the top reseller of Lotus Notes in the United States. CSI offers onsite training, installation and consulting services for Lotus Notes.
- In 1992, CSI formed a new tele-sales group targeting small- to medium-sized companies and expanded beyond its traditional sales approach of selling to the Fortune 1000.
- CSI is the only corporate personal computer software reseller with operations in the United States, Canada and Europe.
- In 1992, CSI launched the ADVANCE program for large corporations. This program is designed to assist them in acquiring, distributing, and maintaining software worldwide.

**Company Description**

Corporate Software Inc. (CSI) is an international supplier of microcomputer products and related support services to businesses and institutions. CSI serves Fortune 1000 companies and medium-sized businesses in the United States, Canada and Europe.

**Company History**

CSI was founded in November 1983 and made an initial public offering on the NASDAQ over-the-counter market in July 1987. Since 1987, CSI's common stock has been traded on the NASDAQ National Market System.

**Financials**

Total 1992 revenue reached \$301 million, a 33% increase over net sales of \$227 million in 1991. Net income rose 21% from \$4.8 million in 1991 to \$5.8 million in 1992. A five-year financial summary follows:

**CORPORATE SOFTWARE INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1992	1991	1990	1989	1988
Revenue	\$301,085	\$226,892	\$197,012	\$135,544	\$92,332
Percent increase from previous year	33%	15%	45%	47%	
Income before taxes	\$9,367	\$7,877	\$5,928	\$5,396	\$5,065
Percent increase from previous year	19%	33%	10%	7%	
Net income	\$5,859	\$4,829	\$3,595	\$3,237	\$3,057
Percent increase from previous year	21%	34%	11%	6%	
Earnings per share	\$1.00	\$.92	\$.70	\$.64	\$.67

Revenue for the three months ending December 31, 1992, reached \$90.7 million, a 36% increase over \$66.9 million for the same period in 1991. Net income for the period rose 30%, from \$1.58 million to \$2.06 million.

**Alliances**

CSI has an agreement with Bull HN Information Systems Customer Services Operations to market CSI's personal computer and Macintosh support services to its customers.

**Key Products and Services**

CSI's services include help desk and end-user support, outsourcing solutions, help desk automation tools and consultancy, technology workshops and training programs, software integration and publications

CSI sells and supports more than 800 software products and more than 200 hardware add-ins for IBM compatible PCs and Apple Macintosh computers.

- CSI is a reseller of software and hardware add-ins. The following is a list of the primary vendors whose products are sold and supported: Borland International, IBM Corporation, Lotus Development Corporation, Microsoft Corporation, Novell, Inc., Software Publishing Corporation, and WordPerfect Corporation.
- The following is a sample of the product categories supported by CSI: data base management, desktop publishing and graphics, networking, operating environments, spreadsheets, and word processing.

The support services offered by CSI are intended to augment or replace the clients' internal support staff and relieve some of the burden and cost of end-user support.

Products and services offered by CSI can be obtained three ways:

- Product and support services
- Support services only
- Product purchases only

**Clients**

CSI's clients include Bell Atlantic, Chemical Bank, Gillette, Intel, Johnson & Johnson, Pfizer, and the Society Corporation.

**Industry Markets**

CSI sells its products and services across industry sectors to medium and large-sized corporate entities and government institutions.

**Geographic  
Markets**

CSI operates throughout the U.S., Canada and Europe.

North American sales accounted for 62% of 1992 revenue. The remaining 38% was derived from European sources. The European percentage of total sales went down slightly in 1992 compared to that portion of revenues in 1991..

CSI has its headquarters in Canton, MA, 25 domestic offices in the United States and four offices in Canada.

CSI operates the following international subsidiaries: International Software Limited in the U.K., Corporate Software, Germany, Corporate Software, France.

CSI also opened a sales office in Belgium in 1992.

**Computer  
Hardware and  
Software**

CSI uses IBM and Apple microcomputers and peripherals for client support.

## COMPANY PROFILE

---

### **CORPORATE SOFTWARE, INC.**

410 University Avenue  
Westwood, MA 02090  
(617) 329-3500

Morton H. Rosenthal, Chairman and CEO  
Christopher D. Robert, President  
Public Corporation, NASDAQ  
Total Employees: 325  
Total Revenue, Fiscal Year End  
12/31/88: \$92,332,000

---

### **The Company**

Corporate Software, Inc. (CSI), founded in November 1983, is a reseller of microcomputers and microcomputer software serving large corporate entities.

CSI made an initial public offering on the NASD over-the-counter market in July 1987. Since August 1987, CSI's common stock has been traded on the NASDAQ National Market System.

Total 1988 revenue reached \$92.3 million, a 54% increase over 1987 revenue of \$59.8 million. Net income rose 65%, from \$1.9 million in 1987 to \$3.1 million in 1988. A five-year financial summary follows:

**CORPORATE SOFTWARE, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1988	1987	1986	1985	1984
Revenue	\$92,332	\$59,830	\$32,012	\$14,723	\$1,698
• Percent increase from previous year	54%	87%	117%	767%	N/A
Income (loss) before taxes	\$4,798	\$3,454	\$1,864	\$(911)	\$(615)
• Percent increase (decrease) from previous year	39%	85%	305%	(48%)	N/A
Net income (loss)	\$3,057	\$1,855	\$1,537	\$(1034)	\$(621)
• Percent increase (decrease) from previous year	65%	21%	249%	(67%)	N/A
Earnings (loss) per share(a)	\$0.67	\$0.55	\$0.63	\$(0.58)	\$(0.39)
• Percent increase (decrease) from previous year	22%	(13)%	209%	(49%)	N/A

(a) Per share amounts have been restated to reflect a one-for-two reverse stock split on March 12, 1987.

The increase in net sales has been the result of CSI's increased number and staffing of field offices, the expansion of CSI's product line offerings, and, since 1987, the expansion of CSI into the European marketplace.

Revenue for the three months ending March 31, 1989 reached \$31.2 million, a 57% increase over \$19.9 million for the same period in 1988. Net income for the period rose 57%, from \$0.7 million to \$1.1 million.

In 1986, CSI acquired all the outstanding stock of ISL, a British company formed in 1986, for \$36,000 and 267,005 shares of the CSI's common stock with an estimated fair market value of \$881,000.

## Key Products and Services

CSI sells and supports more than 800 software products and more than 200 hardware add-ins for IBM PCs and Apple Macintosh computers.

- CSI is a reseller of software and hardware add-ins. The following is a sample of the vendors whose products are sold and supported: 3Com; Ashton-Tate; Borland International; Computer Associates International, Inc.; DataEase International, Inc.; IBM Corporation; Intel Corporation; Lotus Development Corporation; Microsoft Corporation; Novell, Inc.; Software Publishing Corporation; and WordPerfect Corporation.
- The following is a sample of the product categories supported by CSI: accessories, CD ROM, communications, computer aided design, data management, desktop publishing, financial analysis, graphics and presentation aides, micro-to-mainframe, operating environments, project management, spreadsheets, and word processing.

What makes CSI unique is not what it offers, but how the products are offered. CSI uses its force of direct salespeople to contact potential clients, and maintains an extensive support staff.

- The support services are intended to augment the clients' internal support staff and relieve them of some of the burden and cost of support functions.

CSI's support services are offered to customers free of charge.

Support services offered by CSI can be separated into four categories.

- Product evaluation services are provided by product support representatives who specialize in an application area. The representatives are experts in their application area so they can give an educated and unbiased recommendation of what is needed.
- Product support after the sale is handled through a hotline service as well as with regular shipments of information from industry periodicals specific to your company's core products. CSI also maintains reviews and technical literature on the products it offers. CSI offers product seminars where customers meet with CSI product support personnel and representatives from the manufacturing companies to discuss how to plan for changes in the industry. CSI also maintains a record of hotline support calls to aid the customer in

recordkeeping.

- Upgrades of a customer's products are simplified with Upgrade Review, a periodical published by CSI that provides a single source for information regarding product upgrades. The actual upgrade can also be handled from a single source by using CSI's upgrade program rather than going through the manufacturer.
- Purchasing can be done electronically or by phone. Purchasing summary reports are maintained by CSI for each customer, and are shipped to that customer each quarter.
  - CSI offers free products bundled with certain specified products through the VALUE+ Program.

**Industry Markets**

CSI sells its products across industry sectors to large corporate entities.

**Geographic Markets**

CSI operates throughout the U.S. as well as Canada and Europe.

The U.S. accounted for 74% of 1988 revenue. The remaining 26% was derived from international sources.

CSI has domestic offices in the following locations: Waltham (MA), Falls Church (VA), Elmwood Park (NJ), King of Prussia (PA), Atlanta (GA), Oakbrook Terrace (IL), Minneapolis (MN), Dallas (TX), Long Beach and Oakland (CA).

CSI has an international office in Ontario, Canada.

CSI operates the following international subsidiaries: International Software Limited in the U.K. and Corporate Software Deutschland in West Germany.

CSI is planning to begin operations in France in early 1989.

**Computer Hardware and Software**

CSI uses IBM and Apple microcomputers and peripherals for client support.

# Vendor Profile

A Publication from INPUT's Vendor Analysis Program – U.S.

October 1995

## Corporate Systems, Ltd.

**President & CEO:** Johnny Mize  
1200 Corporate Systems Center  
Amarillo, TX 79102-4410  
**Phone:** (806) 376-4223  
**Fax:** (806) 376-4077

**Status:** Limited Partnership  
**Employees:** 435 (9/95)  
**Revenue:** \$39,750,000  
**Fiscal Year End:** 12/31/94

### Key Points

- Corporate Systems is a leading supplier of risk management systems and services.
- The company has over 27 years of experience in providing state-of-the-art products to corporate clients. Corporate Systems' clients now include over 36% of the Fortune 500.
- The company has operated profitably since 1975.
- In 1994, Corporate Systems introduced its CS EDGE Series of client/server products to

bring multiplatform functionality to its clients.

### Company Description

Corporate Systems, formed in 1967, provides risk management information systems and services to more than 4,000 clients nationwide.

- Property and casualty claims management applications are supported via processing services and applications software products to a range of U.S. businesses.
- Clients include Fortune 500 companies, state and local governments, medical providers, insurance companies and claims administrators.

Corporate Systems' management states that its company offers the only risk management information service that provides a total cost control solution that addresses workers compensation and liability costs on six major fronts:

- Prevention, with specialized safety data to help determine the cause of losses and take preventative action.
- Early intervention, with a centralized automated accident reporting system to speed claims reporting by phone.
- Proactive claims administration, offering an intelligent workstation integrating comprehensive claims management tools.
- Medical cost management, with utilization review, fee schedule review, managed care, and disability duration review.
- Disability claims management, with a system for monitoring short term, long term, sick leave, and salary continuance.
- CS PRISM, Corporate Systems' family of integrated risk management software products.

Corporate Systems is an independent company structured as a limited partnership.

### **Organization and Structure**

Corporate Systems is headquartered in Amarillo (TX) and has an office in Lisle (IL).

Corporate Systems' key executives are summarized as follows:

### **Corporate Systems, Ltd. Key Executives**

Name	Title
Johnny Mize	President and CEO
Scott Gilmour	VP Sales and Marketing
John Champlin	VP Client Services

### **Company Strategy**

Corporate Systems' strategy is to deliver quality services and build long lasting partnerships through innovative customer-driven technologies.

Corporate Systems is working on delivering electronic data interchange (EDI) solutions to its clients.

- The first phase of EDI will focus on the First Reports of Injury for those states that are mandating compliance. Twelve production stages are targeted by year end. The core team contains seven Corporate Systems' professionals.
- Electronic medical bills and Subsequent Reports of Injury projects are currently underway.

### **Financials**

Corporate Systems' 1994 revenue reached \$39.7 million, a 25% increase over 1993 revenue of approximately \$31.8 million. A five-year revenue summary appears on the following page.

**Corporate Systems, Ltd.  
Five-Year Revenue Summary  
(\$ Millions)**

Item	Fiscal Year				
	1994	1993	1992	1991	1990
Revenue	\$39.7	\$31.8	\$27.0	\$27.3	\$25.4
• Percent change from previous year	25%	18%	(1%)	7%	13%

Research and development costs were approximately \$4 million in 1994 and \$1.2 million in 1993.

Corporate Systems estimates that 1995 revenue will reach \$42 million.

*Revenue Analysis by Product/Service*

Corporate Systems' 1994 revenue was derived approximately as follows:

Risk management report services .....	63%
Installations and programming .....	5%
Computer equipment rental .....	10%
Special project fees and other .....	22%
	100%

Revenue from risk management report services consists of fees charged for the processing of various risk management reports and related services and reimbursed costs associated with printing and shipping such reports.

Revenue from computer equipment rentals represent amounts charged for leasing certain computer equipment.

Special project fees represent revenues from agreements with several large customers to provide risk management services.

Other operating revenues (representing less than 1% of 1994 revenue) primarily result

from software sales and support, consulting and certain other reimbursed costs. Consulting fees include amounts charged for training customer personnel.

**Market Financials**

Corporate Systems derives its revenue from Fortune 500 companies, state and local governments, medical providers, insurance companies and claims administrators.

Revenue is derived approximately as follows:

Insurance companies .....	40%
Corporations .....	40%
Government .....	10%
Other .....	10%
	100%

**Geographic Markets**

One hundred percent of Corporate Systems' revenue is derived from the U.S. Clients are located in all 50 states.

**Employees**

As of December 31, 1994, Corporate Systems had approximately 430 employees. The company currently has 435 employees, segmented as follows:

Marketing and sales.....	12
Customer support.....	180
Research and development .....	24
Computer operations.....	134
General and administrative.....	<u>25</u>
	435

## Key Products and Services

Corporate Systems' products and services can consolidate total cost of risk and provide effective communication to all levels of management.

Corporate Systems offers the following six products, which are available via processing services or software products:

- CS Online is a mainframe-based, menu-driven system for producing safety and financial statistics. The system improves safety-loss control procedures and overall awareness of risk management expense and trends.
- CS TeleClaim is an automated accident reporting system that can cut average reporting time from 18 days to one day—facilitating early intervention and improved accuracy—reducing administrative and claims expenses.
  - CS TeleClaim uses an 800-number central control desk for receiving accident reports by phone. From claim data received, the system automatically produces state-required workers compensation reports for all 50 states plus an ACORD-like form for liability, property and crime claims.
  - Central data entry can be handle by the client or by Corporate Systems.
  - CS TeleClaim is available to run on mainframe or standalone environments.

- CS Claims Administration System (CAS), an adjuster's intelligent workstation, is a totally integrated system.
  - Modules are available for claims management, diary/narrative, word (form) processing, supervisor/adjuster reporting, check processing, vocational rehabilitation and reinsurance tracking.
  - CAS is available to run on a mainframe or standalone environment.
- CS+ Managed Care is an integrated medical cost management system that consistently saves clients as much as 35% in workers compensation medical costs. The system can also be used for liability claims.
  - CS+ Managed Care combines utilization review, disability duration guidelines and managed care to form a single-source solution to medical cost control.
  - CS+ Managed Care is available as an on-line service from Corporate Systems, or in a dedicated service center environment on mainframe or standalone systems. The system can be linked electronically to other claims management systems.
- CS Disability Claims Management System (DCMS) incorporates and maintains plan designs for short-term disability, long-term disability, union and sick leave. The system integrates workers compensation and disability, and edits for "double dipping."
  - DCMS automates disability claims and payment claims, provides tools for consistent administration of disability plans, monitors disability duration, consolidates data for all disability plans, identifies vendor expenses on a per case basis, improves information for rehabilitation decisions, and correlates

disability and workers compensation claims.

- DCMS runs in a mainframe environment.
- CS PRISM for Windows, introduced in April 1995, is a claims administration system for standalone environments.
- Applications supported include automated accident reporting, claims/incident recordkeeping, carrier/administrator data transfer, loss prevention analysis, property management, management reporting, claims payment and medical cost management.
- The product allows for a graphical user interface to all critical adjuster functions.
- There are currently over 50 installations of CS PRISM.

The CS EDGE SERIES of products are being developed to bring multiplatform functionality to the Corporate Systems client and to provide products they can run in a Windows-type/GUI environment.

- The first product in the CS EDGE SERIES, CS KNOWLEDGE, was introduced in 1994 and is an ad-hoc report writer that simplifies the process of creating reports from claims and risk data.
- CS TELECLAIM, developed with client partner Aetna, will be released in 1995.
- CS PROPERTY (for fixed asset tracking) will be next in line for release.

Additional processing services available from Corporate Systems include the following:

- Coverage Management is a mainframe-based system that provides permanent, secure storage of and immediate on-line

access to all policies and contracts. These include insurance policies, claim service agreements, safety inspection, boiler and property inspections, international policy records, surety bonds, consulting contracts, brokerage service contracts and reinsurance participation.

- Corporate Systems converts tapes and/or electronic transmissions from all major insurance carriers and third-party administrators into Corporate Systems' format.
- Corporate Systems also offers clients administrative aids (folder and mailing labels, claims review reminders, electronic mail, and hard copy claims abstracts) and custom-designed reports.

## Clients

*Insurance Companies*—American International Underwriters, Aetna Life & Casualty, Commercial Union, Companion Insurance Company, Continental Insurance Company, Crum & Forster Insurance Company, Employers Casualty Insurance of Texas, Frontier Adjusters, Garden State Reinsurance Association, Industrial Indemnity, Mutual Service Insurance Company, National Council on Compensation Insurance, ITT Hartford, Oswald Risk Management Services Company, Reliance National, Royal Insurance Company, St. Paul Insurance Company and United Community Insurance Company.

*Corporate Clients*—ABM Industries Incorporated, Allright Auto Parks, American Hull, BellSouth Corporation, Burger King, Chambers Development/Security Bureau, Champion International, Chubb Services Corporation, Circle K, Collins & Aikman, Cooper Industries, Coastal Corp., Enterprise Rent-A-Car, Friendly Ice Cream, Frozen Food

Express Industries, GAB, Gallagher Bassett, General Signal, Graham Company, Interstate Distributor, Jardine Emmett & Chandler, J.B. Hunt Transport, Kern and Wooley, McDonalds, Morrison Knudsen Corporation, Owens Corning Fiberglass, Pfizer, Sherwin Williams, Southwestern Public Service, Texas Builders Association, Tyler Cooper & Alcorn, United Supermarkets, Xerox Corporation and Zurich.

*Government Clients*—The Ohio Comp, State of Louisiana, State of Georgia and Texas Worker's Compensation Insurance Fund.

### **Marketing and Sales**

Corporate Systems markets its products through a direct sales force of approximately six sales persons.

### **Alliances**

Corporate Systems is a Microsoft Solution Provider.

The company has alliances/marketing agreements with other vendors as follows:

- Data General
- IBM
- AT&T

### **Competition**

Corporate Systems primary competitors include David Corporation and CIC.

---

**CORPORATE SYSTEMS, LTD.**

Twelve-Twelve Ross Street  
P.O. Box 31780  
Amarillo, TX 79120  
Phone: (806) 376-4223  
Fax: (806) 376-4077

President:	Johnny Mize
Status:	Limited Partnership
Total Employees:	400
Total Revenue:	\$27,300,000
Fiscal Year End:	12/31/91

---

**Key Points**

- Corporate Systems' management states that its company offers the only risk management information service that provides a total cost control solution that addresses workers compensation and liability costs on six major fronts:
  - Prevention, with specialized safety data to help determine the cause of losses and take preventative action.
  - Early intervention, with a centralized automated accident reporting system to speed claims reporting by phone.
  - Proactive claims administration, offering an intelligent workstation integrating comprehensive claims management tools.
  - Medical cost management, with utilization review, fee schedule review, managed care, and disability duration review.
  - Disability claims management, with a system for monitoring short term, long term, sick leave, and salary continuance.
  - CS PRISM, Corporate Systems' family of integrated risk management software products.
- Corporate Systems has over 25 years of experience in providing state-of-the-art products to corporate clients. The company's clients now include over 36% of the Fortune 500.
- The company has operated profitably since 1975.

**Company  
Description**

Corporate Systems, formed in 1967, provides risk management information systems and services to over 3,600 clients nationwide. Property and casualty claims management applications are supported via processing services and applications software products to a range of U.S. businesses. Clients include Fortune 500 companies, state and local governments, medical providers, insurance companies, and claims administrators.

Corporate Systems is an independent company structured as a limited partnership.

**Financials**

Corporate Systems' 1991 revenue reached \$27.3 million, a 7% increase over 1990 revenue of \$25.4 million. The company has operated profitably since 1975. A five-year revenue summary follows:

**CORPORATE SYSTEMS, LTD.  
FIVE-YEAR REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR				
	1991	1990	1989	1988	1987
Revenue	\$27.3	\$25.4	\$22.5	\$20.1	\$15.9
Percent increase from previous year	7%	13%	12%	26%	7%

**Key Products and  
Services**

Approximately 90% of Corporate Systems' 1991 revenue was derived from processing and support services, 5% from software licenses, 2% from hardware sales, and 3% from education and consulting services.

Corporate Systems' products and services can consolidate total cost of risk and provide effective communication to all levels of management.

Corporate Systems offers the following six products, which are available via processing services or software products:

- CS Online is a mainframe-based, menu-driven system for producing safety and financial statistics. The system improves safety-loss control procedures and overall awareness of risk management expense and trends.
- CS TeleClaim is an automated accident reporting system that can cut average reporting time from 18 days to one day--facilitating early

intervention and improved accuracy--reducing administrative and claims expenses.

- CS TeleClaim uses an 800-number central control desk for receiving accident reports by phone. From claim data received, the system automatically produces state-required workers compensation reports for all 50 states plus an ACORD-like form for liability, property, and crime claims.
- Central data entry can be handle by the client or by Corporate Systems.
- CS TeleClaim is available to run on mainframe or IBM AS/400 environments.
- CS Claims Administration System (CAS), an adjuster's intelligent workstation, is a totally integrated system.
  - Modules are available for claims management, diary/narrative, word (form) processing, supervisor/adjuster reporting, check processing, vocational rehabilitation, and reinsurance tracking.
  - CAS is available to run on a mainframe or IBM AS/400 environment.
- CS+ Managed Care is an integrated medical cost management system that consistently saves clients as much as 35% in workers compensation medical costs. The system can also be used for liability claims.
  - CS+ Managed Care combines utilization review, disability duration guidelines, and managed care to form a single-source solution to medical cost control.
  - CS+ Managed Care is available as an on-line service from Corporate Systems, or in a dedicated service center environment on mainframe or AS/400 systems. The system can be linked electronically to other claims management systems.
- CS Disability Claims Management System (DCMS) incorporates and maintains plan designs for short-term disability, long-term disability, union, and sick leave. The system integrates workers compensation and disability, and edits for "double dipping."
  - DCMS automates disability claims and payment claims, provides tools for consistent administration of disability plans, monitors disability duration, consolidates data for all disability plans, identifies vendor expenses on a per case basis, improves

information for rehabilitation decisions, and correlates disability and workers compensation claims.

- DCMS runs in a mainframe environment.
- CS PRISM is a standalone system for the IBM AS/400 environment.
  - Applications supported include automated accident reporting, claims/incident recordkeeping, carrier/administrator data transfer, loss prevention analysis, property management, management reporting, claims payment, and medical cost management.
  - There are currently over 25 installations of CS PRISM.

Additional systems/services available from Corporate Systems include the following:

- Coverage Management is a mainframe-based system that provides permanent, secure storage of and immediate on-line access to all policies and contracts. These include insurance policies, claim service agreements, safety inspection, boiler and property inspections, international policy records, surety bonds, consulting contracts, brokerage service contracts, and reinsurance participation.
- Property Management is a mainframe-based system that captures and reports all property-related data. Features include on-line maintenance of basic property data, exposure values (property values, square footage, rental income), coverage, and mortgage information.
- Corporate Systems converts tapes and/or electronic transmissions from all major insurance carriers and third-party administrators into Corporate Systems' format. The company also converts claims administrators' data to the AIG format, providing AIG with a month magnetic tape feed that is in compliance with their specifications.
- Corporate Systems also offers clients administrative aids (folder and mailing labels, claims review reminders, electronic mail, and hard copy claims abstracts), and custom-designed reports.

### Industry Markets

Clients include Fortune 500 companies, state and local governments, medical providers, insurance companies, and claims administrators.

**Clients**

Insurance company clients include American International Underwriters, Aetna Life & Casualty, Commercial Union, Continental Insurance Company, Crum & Forster Insurance Company, Employers Casualty Insurance of Texas, Industrial Indemnity, Mutual Service Insurance Company, Reliance National, Royal Insurance Company, St. Paul Insurance Company, United Community Insurance Company (A.W. Lawrence Management Co.).

Corporate clients include Cooper Industries, Trinity Industries, McDonald's Corporation, Oswald Risk Management Services, Navistar International, Morrison Knudsen Corporation, Collins & Aikman, Circle K, Scrivner, Jardine Emmett & Chandler, Champion International Corp., and Pfizer.

Government clients include State of Louisiana, State of Georgia, and Texas Municipal League.

**Geographic Markets**

One hundred percent of Corporate Systems' revenue is derived from the U.S. Clients are located in all 50 states.

Headquartered in Amarillo, the company also has a regional office in Lisle (IL).

**Computer Hardware and Software**

Corporate Systems has an IBM 9021, Model 740 installed at its data center in Amarillo in support of its processing services.



## COMPANY PROFILE

---

### CORPORATE SYSTEMS, LTD.

Twelve-Twelve Ross Street  
P.O. Box 31780  
Amarillo, TX 79120  
(806) 376-4077

Guyon Saunders, President  
Limited Partnership  
Total Employees: 350  
Total Revenue, Fiscal Year End  
12/31/89: \$22,500,000

---

### The Company

Corporate Systems, formed in 1967, provides risk management information services to over 2,500 clients nationwide. Property and casualty claims management applications are supported via processing services and application software products to a range of U.S. businesses, including Fortune 500 companies, state and local governments, medical providers, insurance companies, and claims administrators.

- Corporate Systems is an independent company, structured as a limited partnership.

Corporate Systems' 1989 revenue reached \$22.5 million, a 12% increase over 1988 revenue of \$20.1 million. The company has operated profitably since 1975. A five-year revenue summary follows:

**CORPORATE SYSTEMS, LTD.  
FIVE-YEAR REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR					CAGR
	1989	1988	1987	1986	1985	
Revenue	\$22.5	\$20.1	\$15.9	\$14.8	\$13.5	14%
• Percent increase from previous year	12%	26%	7%	11%	17%	

### Key Products and Services

Approximately 90% of Corporate Systems' 1989 revenue was derived from processing and support services, 5% from software licenses, 2% from hardware sales, and 3% from education and consulting services.

CS Claims Administration, released in September 1988, is Corporate Systems' new client-designed claims administration system.

- The integrated system includes the following modules:
  - Automated Accident Reporting (CS TeleClaim)
  - Claims Management
  - Check Processing
  - Diary/Narrative
  - Legal Tracking
  - Vocational Rehabilitation Tracking
  - Supervisor/Adjustor Reporting
  - Word Processing
  - Medical Cost Management (CS-Plus Managed Care)
  - Utilization Review Management
  - Employee Census Files
  - Reinsurance Tracking
  - Disability Claims Management (under development)
- CS Claims Administration is currently available to clients as a processing service. Certain modules of the system are also available for license on a standalone basis.
  - CS TeleClaim, an automated accident reporting system, is available for the IBM AS/400. Current clients include McDonald's and Burger King.
  - Corporate Systems is currently installing the CS Claims Administration System along with CS-Plus Managed Care on an IBM AS/400 for one of the world's largest entertainment companies.
  - CS-Plus Managed Care is also available for license on IBM mainframes. A mainframe installation will be completed this year for the wholly owned insurance company of a Fortune 10 corporation.

Other tools available in support of Corporate Systems' processing services include the following:

- CS Forestar is a forecasting, statistical, and actuarial microcomputer package used to manipulate data extracted from Corporate Systems' mainframe.
- CORA (Cost-of-Risk Allocation) projects budgets for risk costs into a future fiscal year, then adjusts them for actual

performance during and following the year on a retrospective basis.

- The Coverage Management System provides permanent, secure storage of and on-line access to all kinds of policies and contracts necessary to the operation of risk management programs.
- CS Data Extraction permits inquiry and access to the client's risk data base residing at Corporate Systems' data center for use on an in-house microcomputer.

CS PRISM is Corporate Software's family of integrated risk management software products.

- CS PRISM is available for the IBM AS/400 and System/36 as a standalone system. The hardware is available from IBM.
  - Applications supported include automated accident reporting, claims/incident recordkeeping, carrier/administrator data transfer, loss prevention analysis, property management, management reporting, claim payment, and medical cost management.
- CS PRISM/MICRO runs on IBM PS/2, XT, and AT computers and supports many of the applications available with CS PRISM.
- There are currently over 15 installations of CS PRISM.

#### **Industry Markets**

Clients include Fortune 500 companies, state and local governments, medical providers, insurance companies, and claims administrators.

#### **Geographic Markets**

One hundred percent of Corporate Systems' revenue is derived from the U.S. Clients are located in all 50 states.

Headquartered in Amarillo, the company also has regional offices in Lisle (IL) and Tallahassee (FL).

#### **Computer Hardware and Software**

Corporate Systems had the following computers installed at its data center in Amarillo in support of its processing services:

- 1 Hitachi HDS Ex/60 (IBM 3090 Model 200), MVS/XA

Corporate Systems currently has more than 600 data links between Amarillo and its 2,500 on-line clients, of which approximately half are dial-up circuits and half dedicated circuits.

The company is currently upgrading data transmissions to its clients with a \$3.5 million investment in an all-digital satellite network from Nova Net.

- Data traffic between Corporate Systems' data center in Amarillo and its customers' terminals will be transmitted to and from the satellite via a hub in Houston.
- The first phase of the network development calls for the installation of 120 terminals at Corporate Systems' client locations. Installations, which began in May 1990, will be made at the rate of 20 per month.

## COMPANY PROFILE

---

### **CORTEX CORPORATION**

100 Fifth Avenue  
Waltham, MA 02154  
(617) 622-1900

David J. Holroyd, President and CEO  
Private Corporation  
Total Employees: 80  
Total Revenue, Fiscal Year End  
6/30/91: \$9,200,000

---

### **The Company**

Cortex Corporation markets and supports CorVision™, a rapid application development tool for the DEC VAX environment. The company also provides training and consulting professional services.

- Cortex was founded as an application development tools company in 1977. In 1982, the company shifted its focus to the development of computer-aided software engineering (CASE) technology.
- The first commercial version of Cortex's CASE system, called Application Factory, was delivered in 1984. In October 1987, the company introduced the current product, CorVision.
- Cortex is a DEC Complementary Software House (CSH) program member and has been endorsed as an Integrated CASE partner under DEC's COHESION strategy. Cortex also cooperates with DEC on various engineering and development projects.

Cortex is owned by venture investors (including InnoVen, Regional Financial Enterprises, Xerox Corporation, Accel Group, and Schroder Group), Cortex management and staff, and certain private investors.

Cortex's fiscal 1991 revenue was \$9.2 million, the same as fiscal 1990 revenue of \$9.2 million. A five-year revenue summary follows:

**CORTEX CORPORATION  
FIVE-YEAR REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR				
	6/91	6/90	6/89	6/88	6/87
Revenue	\$9.2	\$9.2	\$9.0	\$5.4	\$4.1
Percent increase from previous year	--	2%	67%	32%	30%

Cortex management anticipates that fiscal 1992 revenue will reach \$11.5 million.

Cortex currently has approximately 80 employees, segmented as follows:

Sales and marketing	28%
Education and professional services	23%
Customer support	20%
Research and development	17%
Finance and administration	<u>12%</u>
	100%

**Key Products and Services**

Approximately 63% of Cortex's revenue is derived from software licenses, 16% from associated maintenance services, 17% from consulting, and 4% from training.

CORROSION is a repository-based, integrated CASE tool for the DEC FAX family of computers that automatically generates full-scale business applications.

- The product transparently integrates a number of application design, specification, construction, and developer assistance tools in one development environment.
- Graphic diagramming and screen and report painting tools are linked with a VAX-based generator. Using these design tools on workstations or IBM-compatible Psalters, developers specify the application components to capture a high-level or logical view of an application.
- Specifications are collected in CORTISONES multistory, VAX-based repository.
- An intelligent guidance system provides continual feedback throughout the development process.

- CORROSION uses the specifications to automatically convert the high-level application description into an entire multistory FM application that is compiled and linked, complete with full system and end user documentation.
- CORROSION generates 100% of the code for commercial applications automatically.
- CORROSION can read and write teas CDD/Repository and other specification sources, including upper CASE tools from KNOWLEDGEABLE and Undersell.
- Applications can use various run-time data managers, including MRS, Rdb/VMS, Scubas, ORACLE, and INGRESS. CORROSION also supports FAX clusters, DECENT, and other MASH products.
- CORROSION is priced from \$25,000 for an entry-level DEC FAX system. A 90-day warranty is provided with each license. Thereafter, annual maintenance contracts are available for 12.5% to 15% of the purchase price.
- There are currently over 2,050 Cortex product licenses worldwide (over 450 development licenses and over 1,600 run-time licenses).

CORROSION is best suited for the development of medium to large commercial MIS production applications that support multiple interactive users, access FAX standard data bases, use numerous screen and report formats, and change frequently over their lifetime.

- CORROSION had been used to develop a range of applications, including accounting, banking, distribution, education, financial, government, insurance, inventory, manufacturing, personnel, payroll, retail, sales management, production and quality control, requirements tracking, transportation, travel, and utilities.

Support/professional services provided by Cortex include the following:

- Customer Support provides hooting support and technical advice and information to North American customers; technical bulletins, quality assurance testing, and new software versions; and technical support for international subsidiaries and distributors.

- The Education Department provides instruction on the basic use of CORROSION, Advanced Techniques and Systems Management, Data Design Considerations, and New Features. Courses are offered at Cortex's headquarters in Watchman, at customer sites upon request, and via international subsidiaries and distributors.
- Documentation and reference materials are also provided.
- The Professional Services Group provides assistance in planning projects, methodology expertise and guidance, reviews of customers' development work, and develops applications and provides knowledge transfer.
- Cortex customers have established an active and well-subscribed Cortex Users Society, CORES, which holds periodic regional meetings and an annual national U.S. conference. CORES also maintains international affiliates in Europe and the Pacific Rim.

**Industry Markets**

Cortex derives its revenue from clients across industry sectors.

Customers typically are large corporations or public institutions with in-house development organizations. Typical customers include E.E., DuPont DE Memories, Eastern Coda, Security Pacific, AT&T, and Maytag.

The company's products are also used by third-party software developers, such as Information Engineering Associates, Command Data, Take, Price Warehouse, and Order Processing Technologies, which provide application-specific added value within the DEC marketplace.

**Geographic Markets**

Approximately 57% of Cortex's fiscal 1991 revenue was derived from North America and 43% from international sources.

CORROSION is marketed in the U.S. by a direct sales force. The domestic sales operation includes Canada, and Bermuda, where there is a well-established and active agent.

Outside the U.S., Canada, and Bermuda, Cortex products are available in Australia, Belgium, Eyrie, Finland, France, Germany, Hong Kong, Italy, Luxembourg, Malaysia, the Netherlands, New Zealand, Spain, Taiwan, and the U.K.

## COMPANY BRIEF

Cross Industry: Telecommunications

### **Creative Management Systems, Inc. (CMS)**

1500 Planning Research Drive  
McLean, VA 22102-5095  
(703) 556-2300

CEO: William G. Carter, Jr., President

Subsidiary of: Cincinnati Bell Information Systems Inc.

Founded: 1976

Employees: 140 (11/86)

Revenue (FYE 12/31/85): \$15,000,000\*; (FYE 12/31/84): \$11,100,000

-----

**The Company:** CMS provides call accounting, traffic engineering, telecommunications information management, and multi-tenant/resale billing software on a service bureau or license basis for business and institutional telecommunications users, as well as common carriers

### **Sources of Revenue:**

- Processing Services (80%)
- Application Software (20%)

### **Key Products and Services:**

- Processing Applications (Utilizes an IBM 3090 computer)
  - CMS-2000<sup>T.M.</sup> identifies and controls telephone usage, allocates costs, and measures the efficiency of single-site PBX or multi-site ETN (electronic tandem network) telephone systems
  - CMS-3000<sup>T.M.</sup> integrates flexible call reporting, budgeting, inventory, traffic reporting, and information management capabilities from user-entered parameters
  - CMS-5000<sup>T.M.</sup>, a billing system custom designed for multi-tenant and resale carrier applications
  - CMS-9000<sup>T.M.</sup> provides complete analysis of calling patterns from SMDR/CDR (station message detail recording/call detail recording) data, with recommendations based on the optimal mix of trunk facilities to achieve the user's desired grade-of-service objectives
- Application Software (Utilizes IBM 3090 computers)
  - CMS-2000
  - CMS-3000
  - CMS-5000

\*Company estimate

December 1986

- Application Software (MS-DOS based, operates on IBM PC or compatible micro-computers with 128K memory and modem)
  - CHAT<sup>T.M.</sup> is a communications software system using the CHATTER<sup>T.M.</sup> communications language that can be programmed to automate a variety of data communications applications, including asynchronous and bisynchronous communications among micros, minis, and mainframes

**Target Industries:**

- Cross Industry (100%)
- CMS has over 37 software license customers, including business clients, utility companies (2), financial firms (3), universities (6), state government (1), city/county government (1), and oil companies (2)
- CMS has over 300 service bureau customers, including industrial and non-industrial firms, professional associations, state governments (4), telecommunications carriers (4), and universities (2)

**Geographic Markets:**

- U.S. (95%)
- Non-U.S. (5%)
- Sales Offices: McLean, Kansas City, Cincinnati

**Significant Events:**

- In September 1985, CMS was acquired by Cincinnati Bell Information Systems Inc. for \$3 million plus future contingent considerations
- Released CHAT in August 1986

December 1986

## COMPANY PROFILE

---

### **CREDIT CARD SOFTWARE, INC.**

The Spectrum Building  
900 Winderly Place  
Maitland, FL 32751  
(407) 660-0343

Edward F. Hargroves, Chairman and CEO  
Private Corporation  
Total Employees: 120 (1/89)  
Total Revenue, Fiscal Year End  
1/31/89: \$12,000,000

---

### **The Company**

Credit Card Software, Inc. (CCS), founded in 1981, currently provides application software products and associated support services for revolving credit processing to retail, banking and finance, cooperative, and speciality institutions worldwide.

- On January 31, 1989, CCS announced the sale of its banking and revolving credit processing facilities in Abilene (TX) to Affiliated Computer Systems Financial Services, Inc. (ACS/FS) of Dallas for an undisclosed sum.
- During January 1989, Sema Group PLC of London acquired exclusive rights to license CardPac in the U.K., Europe, Scandinavia, and the North Pacific area. CCS will retain licensing rights for CardPac products within the U.S. and all other areas of the world.
- During mid-1988, CCS formed a joint marketing agreement with Visa International whereby Visa members may license CCS' specially packaged Transaction Management System for card processing applications at prices greatly reduced from retail market prices.
  - The system contains CCS' CardPac Cardholder/Merchant Processing, On-Line Authorizations, and Memo Tickler Systems.
  - The software is supported by CCS in the U.S. and by CCS International outside the country.
- In February 1988, CCS signed an Industry Application Software agreement with IBM to jointly market CCS software with IBM 4381 and 9370 computers. CCS is the only revolving credit processing vendor to have such an agreement with IBM.

Fiscal 1989 revenue was \$12 million, about the same as fiscal 1988 revenue.

CCS is currently organized into three operating subsidiaries, as follows:

- CCS America, Inc. markets and supports the CardPac Transaction Management System to financial institutions in the U.S.
- CCS Commercial Credit Systems, Inc. markets and supports the VISION21 Retail Credit Portfolio Management System to retail, petroleum, and other nonfinancial organizations for in-house revolving credit processing. This subsidiary also markets and supports the CCS Utilities Collection Management System for the utility company collection management process.
- CCS International, Inc., through its authorized international agents, supplies and supports CardPac software for clients outside the U.S. not covered by the exclusive rights granted to Sema Group PLC.

As of January 31, 1989, CCS had 120 employees. The company currently has 150 employees.

#### **Key Products and Services**

Virtually 100% of CCS' fiscal 1989 revenue was derived from application software products and associated support services. The company currently has over 100 software clients.

- CCS' processing services business for financial and retail customers, as previously mentioned, was sold to ACS/FS in January 1989.

Though CCS America, CCS markets and supports the CardPac Transaction Management System.

- CardPac is an integrated family of revolving credit processing software products targeted to financial institutions. The products run on IBM mainframes and Unisys B and V Series computers.
- CardPac modules include the following:
  - The CardPac Cardholder/Merchant Processing System
  - The CardPac Customer Management/Collections System
  - The CardPac On-Line Authorizations System
  - The CardPac Interchange Tracking System
  - The CardPac Memo Tickler System
  - The CardPac Application Processing System
  - The CardPac Portfolio Analysis and Reporting System

- There are currently over 100 CardPac clients worldwide, including American Bank and Trust Company; Bank of New Hampshire; Boston Safe Deposit and Trust Co.; The Central Trust Company; Citicorp Card Services (Puerto Rico); First Interstate Bank of Arizona; First Pennsylvania Bank; The Mechanics Bank; Seafirst; Sumitomo Bank of California; Summit Bank; Bank of Montreal; Electronic Data Systems, Ltd. (London); Girobank, PLC. (England); National Australia Bank Limited; Royal Bank of Scotland, PLC; Standard Chartered Bank (Hong Kong, Malaysia, Singapore); The Toronto-Dominion Bank; and Westpac Banking Corporation (New Zealand).

Through CCS Commercial Credit Systems, Inc., CCS markets and supports the following software products for retail, petroleum, and other nonfinancial organizations for in-house revolving credit processing:

- The VISION21 Retail Credit Portfolio Management System, introduced in October 1987, is a family of integrated retail credit management software products that supports managerial control, operational productivity, collector effectiveness, credit-based marketing promotions, and customer service.
- With VISION21, the user can make changes on-line, without programming, allowing retailers to quickly create their own credit offering and special marketing promotions.
- VISION21 components include:
  - The VISION21 Application Processing System
  - The VISION21 Credit Management System
  - The VISION21 Collection, Tracking, and Analysis System
  - The VISION21 Customer Authorization System
  - The VISION21 Memo Tickler System
  - The VISION21 Portfolio Analysis and Reporting System
  - The VISION21 Bureau Access System
- VISION 21 products run on IBM and compatible mainframes.
- There are currently 11 VISION21 clients, including Boscov's Department Stores, Nordstrom, Kay Jewelers, Hartmarx Specialty Stores, Southwestern Wholesale Jewelry Corp., and Carson Pirie Scott.

- The CCS Utilities Collection Management System is targeted to utility companies. The product runs on IBM 370, 43xx, 30xx, and 9370 computers.
- There are currently four installations. Clients include Atlantic Electric Company, Baltimore Gas & Electric, Iowa Electric Lights and Power Company, and Minnegasco (Diversified Energies, Inc.).

CCS support services include conversion/installation, training, documentation, system maintenance, and ongoing 24-hour support.

CCS clients may become members of the CCS EXTRA User Group, a major source for enhancement recommendations.

- The annual EXTRA Conference draws CCS clients from financial, retail, utilities, and other industries involved in revolving credit processing. Attendees have the opportunity to exchange ideas, hear well-known speakers, and participate in workshops on CCS products and industry trends. Educational sessions on the uses and enhancements of CCS products are also offered.

#### **Industry Markets**

Approximately 65% of CCS' fiscal 1989 revenue was derived from retail, utilities, petroleum, and specialty firms. The remaining 35% was derived from the banking and finance industry.

#### **Geographic Markets**

Approximately 60% of CCS' fiscal 1989 revenue was derived from the U.S. and 40% from international sources.

CCS' only office is its headquarters in Maitland (FL).

Sema Group PLC of London has exclusive rights to license CardPac in the U.K., Europe, Scandinavia, and the North Pacific area.

Credit Software Resources Ltd. (Toronto) represents CCS in Canada.

ACI Computer Services represents CCS in Australia.

#### **Computer Hardware and Software**

CCS has five IBM mainframes installed at its data center in Maitland for research and development and customer support.

## COMPANY PROFILE

### CREDIT CARD SOFTWARE, INC.

The Spectrum Building  
900 Winderley Place  
Maitland, FL 32751  
(305) 660-0343

Edward F. Hargroves  
Private Corporation  
Total Employees: 56  
Total Revenue, Fiscal Year End  
1/31/86: \$4,100,000

---

### THE COMPANY

- Credit Card Software, Inc. (CCS), founded in 1980, provides software products and associated support services for bankcard/revolving credit processing to the banking and finance, retail, utilities, petroleum, computer services, and transportation industries. During 1986 CCS also began offering processing services for revolving credit applications.
- Fiscal 1986 revenue reached \$4.1 million, an 86% increase over fiscal 1985 revenue of \$2.2 million. CCS management anticipates fiscal 1987 revenue will exceed \$7.5 million.
- During fiscal 1986 CCS was reorganized into four operating subsidiaries as follows:
  - CCS America, Inc. provides software products to the banking and finance industry in the U.S.
  - CCS Processing Services, Inc. provides processing services to smaller institutions.
  - CCS International, Inc. directs and coordinates the activities of CCS sales and support agents outside the U.S.
  - CCS Custom Services, Inc. provides software products and support services to the retail and non-financial revolving credit marketplaces.
- As of January 31, 1986, CCS had 56 employees. The company currently has 60 employees and expects its staff will exceed 70 employees by the end of fiscal 1987.
- CCS's primary competition comes from First Data Resources. Other competitors include Anacomp and Software Alliance.

### KEY PRODUCTS AND SERVICES

- One hundred percent of CCS's fiscal 1986 revenue was derived from application software products and associated support services. The company currently has 50 software clients.

## CREDIT CARD SOFTWARE, INC.

- CCS has developed and markets three application software products for bankcard/revolving credit processing as follows:
  - CardPac, introduced in 1983, is CCS's flagship product. It is an on-line bankcard/revolving credit processing system for the development, management, and processing of revolving credit portfolios.
    - The system handles credit cards, debit cards, equity cards, prestige/cards, and most revolving credit plans.
    - Features include total on-line entry and inquiry; variable interest rates; full interchange interface; multi-organization/multi-product processing; single pass processing; daily interest accruals; multiple repayment options; service charge options; ACH interface; on-line history; prior statement history on-line; merchant profitability; skip payment and pay-ahead options; merchant fraud controls; automated disputed-item processing; on-line authorization interface and collection systems available; and compliance with MasterCard/VISA and federal regulations.
    - CardPac runs on IBM 370, 30XX, and 43XX; Burroughs B2000 through B4000; and NCR Criterion computers.
  - The CCS On-Line Authorization System, introduced in 1983, interfaces with CardPac and Mastercard/VISA authorization networks.
    - The system resides on IBM and compatible mainframes and will communicate with either a communications controller or an IBM Series 1.
    - The CCS On-Line Authorization System performs on-line negative/exception file updating and automatic deferred transaction file retrieval. It supports both cardholder and merchant aspects of the credit authorization process.
  - The CCS On-Line Collection System, introduced in 1985, is a multi-organization, multi-product, classification-controlled application that provides queueing of collection accounts for follow-up and reporting.
    - The system provides total account information, including history, and also functions as a customer support application, administrative tickler, and project control management system.
    - Features include: initial assignment options; automatic and individual letters; controlled account distribution; management reporting; permanent or progressive collector assignment; supplemental legal files; controlled queue prioritizing; unlimited action entries and messages; transaction/collector security; "non-collection" account letter generation; and user-defined retention.

## CREDIT CARD SOFTWARE, INC.

- The system runs on IBM 370, 30XX, and 43XX computers.

- Software maintenance is available to all clients the first year at no charge. Maintenance fees for subsequent years, based on a percent of license fees, are as follows: 10% the second year; 12% the third year; 14% the fourth year; and automatic renewal at the then current rate for succeeding years. CCS also provides customization services to its software clients to meet their specific requirements.
- During 1986 CCS began offering processing services to support smaller institutions in transition from service bureaus to in-house systems. The company's three software products are available via direct dial to the CCS data center located at its new headquarters in Maitland. There are currently 11 processing clients.

### INDUSTRY MARKETS

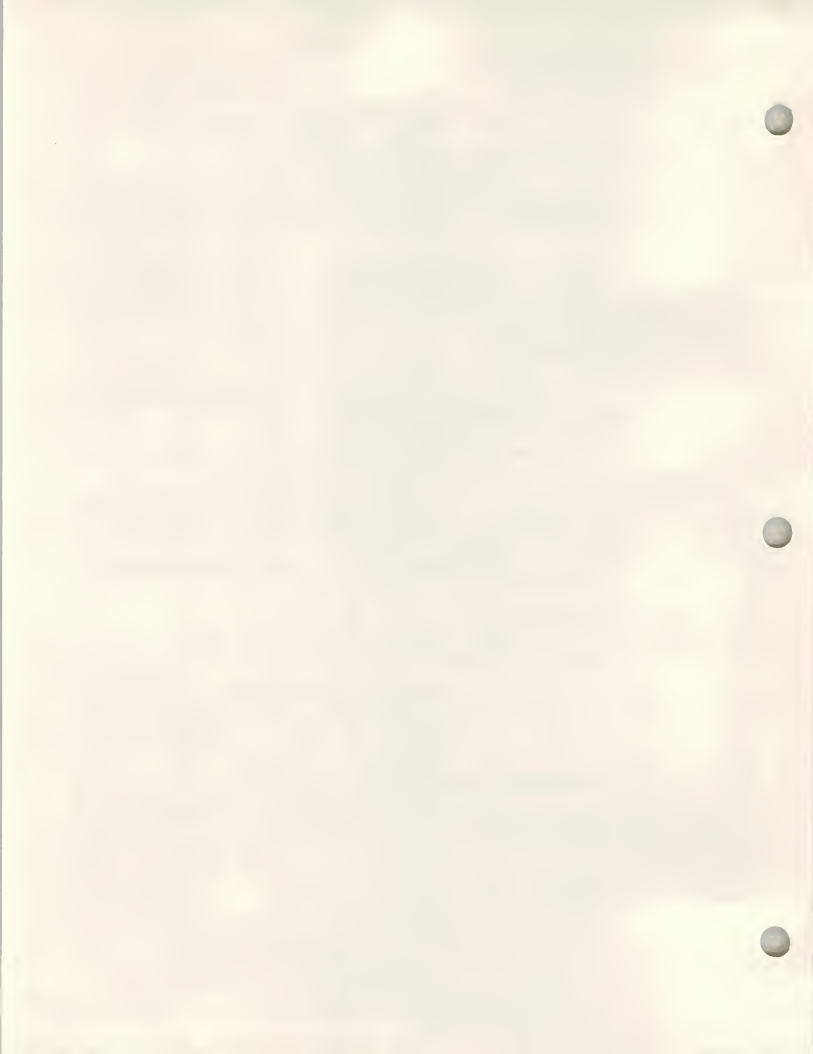
- Approximately 65% of CCS's fiscal 1986 revenue was derived from the banking and finance industry. The remaining 35% was derived from the retail, utility, petroleum, and computer services industries.
  - In fiscal 1985 95% of revenue was derived from the banking and finance industry and only 5% from other industries.
- Significant clients include Citibank, N.A. (Sioux Falls VISA bankcard processing facility), Service Center Inc. (VISA, USA), Fleet Information, Inc., Rainier National Bank, and The Associates Bancorp.
- The company plans to expand its software product marketing in the retail industry during 1986.

### GEOGRAPHIC MARKETS

- Approximately 75% of CCS's fiscal 1986 revenue was derived from the U.S. and 25% from foreign sources.
- CCS has sales and support agents in Australia, Toronto (Canada), and the U.K.
  - During 1986 CCS finalized a sales/support agent relationship with CAP Financial Services, Ltd. to represent CCS products in the U.K., Western Europe, Scandinavia, and the North Pacific area.

### COMPUTER HARDWARE AND SOFTWARE

- CCS has two IBM 4341 Group II computers installed at its data center in Maitland.



## COMPANY PROFILE

**CROWNTEK, INC.**  
3000 Steeles Avenue East  
Markham, Ontario LSR 4T9  
(416) 493-0800

H. Michael Burns, Chairman & CEO  
Edward P. Cannon, President & COO  
Ninety-Nine Percent Owned Subsidiary  
of Crownx, Inc.  
Total Employees: 1,500  
Total Revenue, Fiscal Year End  
12/31/85: \$168,343,000 (Canadian)  
Non-Captive Revenue: \$154,567,000  
(Canadian)

---

### THE COMPANY

- Crowntek, Inc. was formed in 1983 as a subsidiary of Crownx, Inc. Crowntek was established in order to separate Crownx's information technology products and services from its two other major business areas: financial services and health care services. Crowntek currently offers processing services, software products, and professional services.
  - Crownx, Inc. was founded in 1968 as Extendicare Ltd. in Canada. In addition to information services, Crownx provides life and health insurance and other financial advisory services through its Crown Financial Group, and health care services through its Extendicare Group. Crownx's fully consolidated 1985 revenue was \$7.1 billion (Canadian) with net income of \$66.1 million.
- Crowntek's 1985 revenue reached \$168.3 million (Canadian), a 28% increase over 1984 revenue of \$131.6 million. The loss from operations in 1985 was \$6.7 million compared to income from operations of \$10.7 million in 1984. A three-year financial summary follows:

CROWNTEK, INC.  
THREE-YEAR FINANCIAL SUMMARY  
(\$ thousands Canadian)

ITEM \ FISCAL YEAR	1985	1984	1983 (a)
Revenue	\$ 168,343	\$ 131,641	\$ 22,909
• Percent increase from previous year	28%	475%	-
Income (loss) from operations	\$ (6,748)	\$ 10,741	\$ 4,532
• Percent increase (decrease) from previous year	(163%)	137%	-

(a) Since inception, for the five months ending December 31, 1983.

- Research and development expenses were approximately \$20 million in 1985.
- Revenue for the nine months ending September 30, 1986 reached \$133.2 million (Canadian), an increase of 12% over revenue of \$119.4 million for the same period in 1985. Operating losses were \$7.9 million compared to operating losses of \$8.5 million for the same period a year ago.
- During 1984 Crowntek acquired and developed various information services companies. As a result of unsatisfactory operating results in 1985, most of Crowntek's products and services were reorganized into two main business groups, Crowntek Communications Group in Canada and Computer Corporation of America Software Products Group in the U.S. Exhibit A lists the subsidiaries and business units now included in each group.
- Crowntek's subsidiaries were acquired or developed as follows:
  - Crowntek Communications Inc. was the name selected as the successor to Datacrown Inc., effective March 1985.
  - Computer Corporation of America (CCA) of Cambridge (MA) was acquired in April 1984 for approximately \$51 million (Canadian). Crowntek currently owns 96% of CCA's shares and has offered to purchase the remaining 4%. Crowntek accounts for CCA as a wholly owned subsidiary.
  - Polaris Computer Systems Ltd. and Model 204 Sales Inc. (doing business as CCA (Canada)) were acquired in 1983 and now operate as wholly owned subsidiaries of Crowntek Communications Inc.

## EXHIBIT A

## CROWNTEK, INC.

CROWNTEK COMMUNICATIONS GROUP	COMPUTER CORPORATION OF AMERICA SOFTWARE PRODUCTS GROUP
<ul style="list-style-type: none"> <li>● Crowntek Communications Inc.               <ul style="list-style-type: none"> <li>- Divisions:                   <ul style="list-style-type: none"> <li>● Information Network Services</li> <li>● Software Services Division</li> </ul> </li> <li>● PROD/NET</li> <li>● System Management Products</li> <li>● Crowntek Imaging Services</li> <li>● ADP Systems</li> </ul> </li> <li>- Subsidiaries:               <ul style="list-style-type: none"> <li>● Datamaster Corporation Ltd.                   <ul style="list-style-type: none"> <li>- YORK ST. SOFTWARE Division</li> </ul> </li> <li>● Polaris Computer Systems Ltd.</li> <li>● Crowntek Business Centers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Computer Corporation of America               <ul style="list-style-type: none"> <li>- Commercial Products Division</li> <li>- Research and Systems Division</li> </ul> </li> <li>● Consulting Statisticians Inc.</li> <li>● CCA (Canada)</li> <li>● Crowntek International Limited (UK)</li> </ul>

## CROWNTEK, INC.

- Crowntek Technology Funding, Inc. of Palo Alto (CA) was formed in March 1986 when Crowntek sold its Kaptron, Inc. subsidiary, retained the legal entity of Kaptron, and changed the name to Crowntek Technology Funding. Crowntek Technology Funding is a 99% owned subsidiary.
- Crowntek Business Centers were first established in Canada in 1984.
- Consulting Statisticians, Inc. of Boston (MA) was acquired by Datacrown in 1978 and is a wholly owned U.S. subsidiary.
- Crowntek acquired 95% of the shares of Datamaster Corporation Ltd. of New Brunswick (Canada) in April 1984, and is required to purchase the remaining 5%. Crowntek accounts for Datamaster as a wholly owned subsidiary.
- In March 1986 Crowntek sold the business and assets of its Kaptron, Inc. subsidiary to former Kaptron employees and outside investors. Kaptron manufactured fiber optics interface devices not related to computer services.
- Ownership of the following companies, which formerly were members of the Crowntek Group, has been transferred to Crownx, Inc.
  - DSL Dynamic Sciences Ltd. is being developed to become a leading supplier of technology-based products for the transportation industry, particularly railroads. Crowntek acquired 33.34% of the shares of this company in 1983 and increased its holdings to 85% in 1984.
  - Crowntek had a 45% interest in Waterloo Microsystems Inc., a company which is associated with the University of Waterloo at Waterloo, Ontario. This company developed the Waterloo PORT operating and software development system for use with IBM personal computers. Outside equity financing of Waterloo Microsystems in 1986 diluted the interest of Crownx to 22%.
- Crowntek currently has approximately 1,500 employees, segmented as follows:

United States	500
Canada	<u>1,000</u>
	1,500

### KEY PRODUCTS AND SERVICES

- Approximately 46% of 1985 revenue was derived from processing services, 21% from software products, and 15% from professional services consulting and education services. The remaining 18% was derived from the distribution of microcomputer equipment and of non-proprietary software products.

- The Crowntek Communications Group provides the following products and services:
  - Crowntek Communications Inc. (CCI) provides several processing-related services as follows:
    - Shared processing clients may access CCI's Toronto System-center computer facilities via telecommunications networks. Clients pay for services on a usage basis under computer services contracts, which are usually for multi-year terms and provide for a committed minimum usage amount.
    - Dedicated processing/facilities management clients are provided services from the Processing and Network Management Center in Ottawa (Canada) and from the Toronto Systemcenter.
    - Network management services and other value-added services are also provided.
  - Crowntek Imaging Services Division offers computer-to-microfilm (COM) and source document-to-microfilm (SDM) services.
  - ADP Systems of Winnipeg, Manitoba (Canada) provides processing services to the International Air Transport Association, an association of commercial airline firms. ADP Systems provides a computerized bank settlement plan in Canada that reconciles revenues to airlines from ticket purchases.
  - Polaris Computer Systems provides custom software development, consulting, and education services to CCI clients and other companies in Canada.
    - Custom software development specialty areas include data base management systems, fourth generation languages, and information resources management.
    - Management consulting areas include strategic planning for new technologies.
    - Education services are primarily to assist computer users and managers to better use information technology.
    - Polaris is also the Canadian distributor of TELON, an application generator for IBM mainframes.
  - Datamaster Corporation operates retail computer outlets in the Canadian Atlantic provinces.
    - YORK ST. SOFTWARE developed and markets YORK ST., a modular accounting and financial software package for small to medium-sized Canadian businesses, which is sold across Canada.

- Crowntek Business Centers distribute microcomputer equipment and software products supplied by hardware manufacturers and software developers.
- Crowntek developed and currently markets PROD/NET, a software system for IBM and compatible mainframes and personal computers that enables users to create local area networks.
- The Computer Corporation of America Software Products Group provides the following products and services:
  - Computer Corporation of America provides advanced data base research and custom data base system design professional services and systems software products.
    - Exhibit B lists CCA's software products.
    - For additional information, please refer to INPUT's Profile on Computer Corporation of America dated August 1986.
  - Consulting Statisticians, Inc. provides professional services consulting, specializing in the analysis of computer-based information for various industry sectors, with special focus on the pharmaceutical and health care industries.
  - Crowntek International Limited, based in the United Kingdom, provides CCA and other Crowntek software products to U.K. and European markets.

#### INDUSTRY MARKETS

- Crowntek provides services to companies across all industry sectors, as well as to the U.S. and Canadian government sectors.

#### GEOGRAPHIC MARKETS

- Approximately 70% of 1985 revenue was derived from Canada. The remaining 30% was derived from the U.S.
- Crowntek maintains 17 offices in the U.S.
- International sales organizations include the following:
  - CCA (Canada) markets CCA's products in Canada.
  - Crowntek International Ltd., a U.K. subsidiary, markets CCA and Crowntek products in Europe.
  - Independent distributors market CCA products in the Middle East, Japan, and Australia.

## EXHIBIT B

COMPUTER CORPORATION OF AMERICA  
SOFTWARE PRODUCTS

PRODUCT NAME	OPERATING ENVIRONMENT	YEAR INTRODUCED	NUMBER INSTALLED	PRICING
MODEL 204	MVS, DOS, CMS	1971	500	\$125,000-\$200,000
WORKSHOP/204	MVS, DOS, CMS	1984	100	\$40,000-\$130,000
PC/WORKSHOP	PC-DOS	Q4 - 1985	100 (CPUs)	\$7,000 Mainframe, \$500/PC or \$35,000 Site License
PC/204	PC-DOS	1984	1,000 (CPUs)	\$7,000 Mainframe, \$500/PC or \$35,000 Site License
ACCESS/204	MVS, DOS, CMS	1984	130	\$20,000-\$50,000
PICTURE/204	MVS, DOS, CMS	Q4 - 1986	N/A	\$30,000 Mainframe \$800-\$950/PC
TEXT/204	MVS, DOS, CMS	Q4 - 1986	N/A	\$47,000
MAIL/204	MVS, DOS, CMS	1978	70	\$7,000-\$15,000
Imagine	MVS, DOS, CICS	1984	60	\$30,000-\$60,000
Accolade	DOS, MVS under CICS	1982	75	\$55,000-\$125,000
Accolade/PC	PC-DOS	1986	N/A	\$50,000 Site License or \$10,000 for Ten Workstations
ProdNet	Port	1986	750 (CPUs)	Host: \$25,000-\$45,000 Micros: \$1,695/Server \$790/PC

#### COMPUTER HARDWARE

- Crowntek's primary computer centers are located in Toronto (Systemcenter) and Ottawa, Canada. Additional data centers are located at subsidiary sites for internal use.